1967 - 1968

CATALOG

ROWAN TECHNICAL INSTITUTE

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Rowan Technical Institute

Salisbury, North Carolina

General Catalog

1967-68

Approved by

THE NORTH CAROLINA STATE BOARD OF EDUCATION

Interstate Highway 85 at Klumac Road

P. O. Box 1555

Salisbury, North Carolina 28144

Telephone: 636-6480

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BOARD OF TRUSTEES

APPOINTED BY THE GOVERNOR

	Term Expires
O. K. Beatty	1967
Angus J. Currie	1971
Dr. Alan F. Scott	1969
D. Earl Young	1973

APPOINTED BY THE ROWAN COUNTY COMMISSIONERS

Lane C. Drye, Vice Chairman	1971
Charles C. Erwin	1967
J. H. Knox	1973
Carroll T. Overton, Chairman	1969

APPOINTED JOINTLY BY THE SCHOOL BOARDS OF SALISBURY AND ROWAN COUNTY

George W. Bame	1967
Stokes Devereux	1967
Clyde H. Harriss	1971
Odell Sapp	1973

ADMINISTRATION

C. Merrill Hamilton ..... *President*

B.S. Ball State University
M.A. Ohio State University
Advanced study University of North Carolina at Chapel Hill and North Carolina State University

Gene H. Phillips ..... *Director of Instruction*

B.S., M.Ed. North Carolina State University

John D. Hobart ..... *Director of Student Personnel*

B.S. Davidson College
M.S. North Carolina State University
Advanced study Duke University and University of North Carolina at Chapel Hill

Bob J. Tate ..... *Director of Evening Programs*

B.S., M.A. Appalachain State Teachers College

A. Curtis Phillips ..... *Director of Adult Education and Extension Programs*

A.A. Wilmington College
B.S. North Carolina State University
Graduate study North Carolina State University

George Keith Boyles ..... *Director of Adult Basic Education*

B.A. Lenoir Rhyne College
M.A. Appalachian State Teachers College
Advanced study North Carolina State University

Grady S. Lloyd ..... *Counselor*

A.B. Lenoir Rhyne College
M.A. Appalachian State Teachers College

Chester L. Basinger, Jr. ..... *Area Fire Service Consultant*

U. S. Armed Forces Institute
Seven years experience in fire service and two years experience in municipal housing inspection

FACULTY

FRANCES G. ALLEN ..... *Secretarial Science*

B.S. East Carolina College
Seven years teaching and secretarial experience

CHARLES R. BENSON ..... *Physics, Mathematics*

B.S. North Carolina State University
Graduate study Wake Forest College

JOHN K. BURNS ..... *Drafting and Design*

B.S. LeTourneau College
Graduate study North Carolina State University

JANET P. CRANFORD ..... *Librarian*

B.A. Westhampton College of the University of Richmond
M.S. University of North Carolina at Chapel Hill

VERNON D. EANES ..... *Air Conditioning and Refrigeration*

Graduate, Danville Technical Institute
Virginia Polytechnic Institute
Licensed Heating and Air Conditioning Contractor
Undergraduate study North Carolina State University

GEORGE E. EVANS ..... *Auto Mechanics*

United States Army-Air Force Technical Training
Nashville Auto Diesel College
General Motors Training Schools
Undergraduate study North Carolina State University

RAYMOND B. GILBERT ..... *Chemistry and Physics*

B.S. North Carolina State University
M.A. University of North Carolina at Chapel Hill
Advanced study Union College Schnectady and University of North Carolina

MARTHA RUTH HOPE ..... *Practical Nurse Education*

B.S. Pfeiffer College
R.N. Grace Hospital, Richmond, Va.

JOSEPH L. E. LEFRANCOIS ..... *Communication Skills and Related Subjects*

B.S. Rigaud Teachers College
B.A., M.Ed. Midwestern University
Advanced study Laval University

GERNAL A. LOWMAN ..... *Machinist Trade*

Nashville Auto and Diesel School
Seven years experience in Machinist Trade

BETTY C. MCCRARY ..... *Practical Nurse Education*

R.N. Watts Hospital School of Nursing, Durham, N. C.
Public Health Nurse

Ervin W. McCulloch ..... *Electrical Installation and Maintenance—Electronics*

B.S. North Carolina State University
Bliss Electrical School
Registered Professional Electrical Engineer
Licensed Electrical Contractor, State of North Carolina

Richard G. McIntyre ..... *Fire and Safety Technology*

A.A.S. Oklahoma State University
Undergraduate study Elon College and University of Maryland

Kenneth L. Payne ..... *Coordinator, Learning Laboratory*

A.B. Catawba College
Graduate study North Carolina State University

Vohn N. Peeler ..... *Electrical Installation and Maintenance*

Graduate, Rowan Technical Institute
U. S. Air Force Technical Training
Undergraduate study Catawba College and Charlotte College
Four years experience as industrial electrician

James H. Price, Jr. ..... *Coordinator, Learning Laboratory*

A.B. Catawba College

B. Grady Sloop ..... *Auto Mechanics*

General Motors Training Schools
Twenty-four years experience in Auto Mechanics Trade

Robert F. Steed ..... *Sewing Machine Mechanics*

Former Instructor, Fayetteville Technical Institute
18 years experience in Sewing Machine Mechanics Trade

Hilton J. Swindell ..... *Welding*

United States Navy Advanced Welding School
Undergraduate study North Carolina State University and Pfeiffer College

Jerry R. Wise ..... *Basic Adult Education*

B.A. Pfeiffer College

STAFF

Mary Coleman ..... *Secretary to President*
Brenda Clement ..... *Secretary to Director of Instruction*
Mildred A. Snider ..... *Secretary to Director of Student Personnel*
Norma W. Shaver ..... *Secretary to Director of Adult Education and Extension Programs*
Ellen Willard ..... *Receptionist*
Mary Ellen Benfield ..... *Secretary*
Nancy T. Lyerly ..... *Bookkeeper*
Sara Thomason ..... *Secretary to Director of Evening Programs*

GENERAL INFORMATION

HISTORY OF THE INSTITUTE

The history of Rowan Technical Institute is marked by steady growth to serve the people of the expanding mid-Piedmont area of North Carolina. In 1960, through the efforts of Salisbury-Rowan business, industrial, educational and civic leaders working through the Chamber of Commerce, a local manpower requirements survey was conducted. The survey results provided the basis for a request to the State Board of Education that an Industrial Education Center be located at Salisbury. Subsequent approval assured establishment of the Center under the administration of the Rowan County Board of Education.

The people of Rowan County, by a decided margin, voted a $500,000 bond issue to purchase land and to finance the construction of physical facilities.

Limited operations were begun in 1962, with the first group of students entering an industrial machine operator training program in June of that year. Following completion of a modern building designed especially for vocational-technical education, the school opened its doors to the first group of full-time students on September 3, 1963.

During the first year, seven pre-employment trade education programs and a variety of short courses to upgrade individuals in their jobs were offered.

In recognition of its successful beginning and its potential for broader service, the school in March 1964 was designated as Rowan Technical Institute by the State Board of Education. This development brought with it further opportunities and responsibilities for service to the people of the area.

Rowan Technical Institute currently offers occupational education leading to employment, general adult education, and a wide variety of programs of service to the Community. The Institute is administered by a Board of Trustees composed of twelve educational, business, industrial and civic leaders. Its support is provided by public funds from local, State, and Federal sources.

PURPOSE AND OBJECTIVES

The purpose of Rowan Technical Institute is to serve the people of mid-Piedmont North Carolina by providing opportunities for their continuing growth and development through occupational, adult, and community service education. The Institute constantly strives to inspire young people and adults to increase their knowledge, to develop needed occupational proficiencies and skills, and to continue their personal growth as responsible citizens in a demo-

cratic society. The ultimate goal is to assist the people who form the main stream of society in experiencing the fullest possible meaning in human life in a changing world of challenge and opportunity.

In keeping with its purpose, the Institute seeks to:

Contribute to the student's self-understanding to the end that he may choose realistic educational and vocational goals, and may become increasingly successful in interpersonal relations.

Provide opportunities for the acquisition of the necessary knowledge and skills that will aid in initial employment and/or occupational growth.

Inspire in the student an active desire for continuing personal growth and development as an essential quality of life.

Help the student better understand his privileges and responsibilities as a citizen in a democratic society and encourage his active participation in the democratic social process.

In seeking to carry out its purpose and objectives, the Institute provides the following:

Two years of technical education appropriate to the needs of the individual and the community.

One year of vocational education for persons preparing for a skilled trade.

Trade extension education for persons who desire to upgrade themselves in their present jobs.

Adult education programs based on community needs and interests with emphasis on:

Basic adult education covering grades 1-8.

Preparation for the State approved Adult Education High School Diploma or the North Carolina High School Equivalency certificate.

Cultural and community service programs.

CAMPUS LOCATION AND FACILITIES

Rowan Technical Institute is conveniently located at Interstate 85 and Klumac Road, which is the center of the population area served. A twenty-five acre campus provides an ideal setting for an occupational education institution.

The modern physical plant containing 40,000 square feet is used to provide realistic instruction in air conditioned laboratories, classrooms and shops. An additional unit containing 4,000 square feet is expected to be completed in September, 1966. This unit will contain specialized laboratory and shop facilities for occupational education.

The library has a growing collection of books and materials selected by professional librarians in consultation with faculty and administrative personnel. Library services are directed by a professional librarian. New students are urged to acquaint themselves with procedures which have been established in the interest of all who use the library. The library is also open to persons in business, industry and the community for reference materials not usually available at other libraries in the area.

A student lounge area is provided for the convenience of students and contains modern vending machines serving food and drinks.

The Institute operates a bookstore from which the students may purchase all necessary textbooks and supply items.

Students who desire living accommodations in the Salisbury area are responsible for making their own arrangements. However, assistance is available at the Office of Student Personnel in locating living accommodations. The Institute does not have dormitory facilities, neither does it provide for supervision of students in their living quarters. Students are considered to be mature individuals capable of personal responsibility for their conduct in the local community.

ACCREDITATION

Rowan Technical Institute operates with full approval of the North Carolina State Board of Education.

PROGRAMS OF STUDY

Rowan Technical Institute offers the following programs of study:

Associate in Applied Science Degree Programs

- Business Administration
- Drafting & Design Technology
- Electronics Technology
- Executive Secretary
- Fire Administration Technology
- Fire & Safety Engineering Technology
- Mechanical Engineering Technology
- Medical Secretary

Diploma Programs

- Air Conditioning & Refrigeration Mechanics
- Automotive Mechanics
- Electrical Installation & Maintenance
- Machinist Trade
- Mechanical Drafting
- Practical Nurse Education
- Welding Trade

Certificate Programs

- Industrial Sewing Machine Mechanics

Sentinel

COFF

ADMISSIONS INFORMATION

POLICY AND PROCEDURE

Rowan Technical Institute operates under an "open door" admissions policy to offer occupational and adult education to all persons who are able to profit from instruction. Placement of students in the various programs of instruction is selective with special emphasis on career guidance and individual admissions counseling. The objective is to assist the student in establishing realistic goals and to assure reasonable potential for success in the particular program of instruction the student desires to pursue.

As a part of the admissions process, placement tests are given for guidance purposes, transcripts of previous education are required, and a personal interview is held with each student prior to his placement in a program of instruction.

Application for admission forms and detailed information on programs of instruction offered may be secured by writing to:

Director of Student Personnel
Rowan Technical Institute
P. O. Box 1555
Salisbury, North Carolina 28144

GENERAL REQUIREMENTS

Admission is available to persons who are eighteen years of age or older. In case a person is less than eighteen and a high school graduate, he is considered to have met the minimum age requirement.

The applicant's general level of education should be sufficient for him to make reasonable progress in the program he desires to pursue. Placement in certain occupational programs requires a high school education or equivalent; however, in certain other programs a high school education is not required for admission. Adult education and pre-curriculum courses are offered for students who need to strengthen their general education or eliminate deficiencies.

A person must be in an acceptable condition of physical and mental health to be admitted. Whenever considered necessary, a medical examination will be required.

Detailed instructions regarding admissions procedures are listed on page 26 for Technical Education Programs, on page 57 for Vocational Education Programs, and on page 80 for Adult Education and Extension Programs.

Applications for admission with advanced standing based on previous post-high school education will be considered on an individual basis. Official transcripts indicating previous course work must be submitted.

The Institute reserves the right to refuse admission to a student if it appears that such action is in the best interest of the Institute and/or the student.

STEPS IN ADMISSION PROCEDURES

A. Application and application fee

The applicant should submit an application form properly completed and accompanied by a $5.00 application fee to the Director of Student Personnel. This fee will be applied toward the tuition for the first quarter of attendance. It is refundable only in case the student is not accepted by the Institute. Application should be submitted well in advance of the beginning of the quarter in which the student desires to enroll. An early application assures adequate time for processing and may enable entry into a program where enrollment is limited.

B. Transcripts

Applicants should request their high school and all other higher educational institutions attended to forward a transcript of their work to Rowan Technical Institute.

C. Initial Placement Test Battery

Each student at Rowan Technical Institute will take an initial placement test battery prior to placement in a program and the first registration for courses. The purpose of the test battery is to provide additional information in planning the student's program. Where initial placement test results and previous school work indicate a lack of readiness to begin a curriculum program, the student will have the opportunity to take refresher courses or work in the Learning Laboratory to strengthen his educational background.

D. Pre-Admission Counseling

Qualified counselors are available to discuss the programs and courses offered by Rowan Technical Institute. It is to the advantage of the prospective student to defer conference with admissions counselors until after his transcripts have been received at the Institute and he has taken the Initial Placement Test Battery. After the applicant's test has been scored and analyzed, he will be mailed an appointment to confer with an admissions counselor. Applicants unable to keep the appointment should telephone the Office of Student Personnel to arrange another appointment.

In reaching a decision regarding placement in a program of instruction, the following factors are carefully considered: the student's interests, general education, aptitudes, experience, and career goal.

E. Placement

Each applicant is notified in writing when he has been placed in a program of instruction.

F. Registration

Students are expected to register for course work on the day specified each quarter in the Calendar of Events. A $3.00 late registration fee will be charged to students registering after the announced registration day.

Late registration is not permitted after the date listed in the Calendar of Events.

STUDENT PERSONNEL SERVICES

GUIDANCE AND COUNSELING

Guidance and counseling services are an essential part of the Rowan Technical Institute program. These services are available to every student from pre-admission through graduation including transfer or job placement.

Each full-time student is assigned a faculty advisor who serves to assist the student with specific course planning and registration during his enrollment in school. The Institute further provides counseling services through the Office of Student Personnel. Here, counseling is available on an individual basis for students, full-time or part-time, who are concerned with problems—personal, vocational or academic. Counseling has the purpose of extending the range of alternatives available for the student's decision.

PLACEMENT TESTING

A series of placement tests are given to all students enrolling for the first time at Rowan Technical Institute. The results of these tests are used during the pre-registration period to assist students in planning their programs of study.

STUDENT ORIENTATION

All new students are required to participate in the orientation program. The purpose of the program is to acquaint the student with the administrative officers, faculty, and student leaders. The rules, policies, and privileges are discussed and individual conferences between the student and his major advisor are held to further orient the student.

JOB PLACEMENT OF GRADUATES

Job placement service is provided for graduates of the Institute. This service is performed by the Office of Student Personnel in cooperation with the Salisbury Office of the Employment Security Commission. Direct contact is maintained also with business and industrial firms in the area to locate employment opportunities in the various occupations taught at the Institute.

Although the responsibility for actually securing employment rests entirely with the individual, job placement service is offered to help students contact potential employers of technical, skilled, business, and health service manpower.

Companies and other community organizations that wish to consider graduates of Rowan Technical Institute are assisted by the Office of Student Personnel and/or the Employment Security Commission in arranging to interview prospective graduates.

GENERAL REGULATIONS

Students are responsible for the observance of all regulations and policies contained in this catalog and others established by the administration in announcements made through bulletins and other official publications. Students are encouraged to familiarize themselves with the contents of the entire catalog.

ATTENDANCE

To make progress toward his chosen career goal, the student is responsible for attending all scheduled classes for which he is registered. Although special circumstances may cause a student to be absent, regular attendance is essential in order to satisfactorily meet course objectives.

All absences that may occur will be evaluated by the instructor of the class from which the student has been absent.

After two absences the student is subject to a warning by the instructor.

Three absences for any reason from the class, laboratory, or shop sessions of a given course will make the student subject to dismissal from the course upon recommendation of the instructor.

Students who can anticipate absences should contact their instructor prior to the absence if at all possible. Should this be impossible, the student should see the instructor as soon after the absence as possible to explain his absence and make up work.

STUDENT CONDUCT

Self-discipline is an essential element of individual growth and development. Accordingly, students are expected to display the qualities of courtesy and integrity that characterize the behavior of mature ladies and gentlemen.

It is expected that students will be governed by such rules and regulations as may be established by the Student Government Association and the Institute.

The Institute does not permit the use or possession of alcoholic beverages on the campus or at Institute sponsored functions. Violation of rules and regulations may subject the student to disciplinary measures or dismissal.

STUDENT INSURANCE

Students participating in Physical Education, Science or Vocational Laboratories or Shops are required to be covered by accident insurance. The Institute provides an inexpensive student insurance program. All students are strongly encouraged to participate.

STUDENT ACTIVITIES

Student activities are an integral part of the student's experience at Rowan Technical Institute. Students are encouraged to participate in student activities.

STUDENT GOVERNMENT ASSOCIATION

Students gain practical experience in responsible citizenship through participation in a program of self-government. The Student Government Association is composed of all full-time students who are enrolled in the Institute. Part-time students may elect to join the Association. The purpose of the Student Government Association shall be to provide the means for responsible and effective student participation in the organization and control of student affairs. The Charter and activities of the Association are subject to approval and sanction of the administration of the Institute.

STUDENT SOCIETIES AND INTEREST GROUPS

A number of societies and interest groups are organized along occupational lines to bring together students and faculty members for purposes of promoting personal growth, vocational development, fellowship, projects of mutual interest, and social activities.

FINANCIAL INFORMATION

Rowan Technical Institute operates on the quarter system. Each quarter is eleven weeks in length. Students pursuing a program of study are required to register and pay all fees at the beginning of each quarter. Every effort is made to keep the student's expense at a minimum. Tuition cost is set by the State Board of Education and is subject to change.

TUITION

Tuition for full-time students in Technical or Vocational Programs is $32.00 per quarter. Students taking less than 13 quarter hours credit pay $2.50 per quarter hour credit.

Students whose legal residency is out of the state of North Carolina shall be charged two and one-half times the above rate.

REFUND POLICY

Tuition refunds may be authorized only in the event that the student must withdraw for unavoidable reasons. In such cases, ⅔ of the tuition paid may be refunded if the student withdraws within ten calendar days after the first day of classes, as published in the Calendar of Events.

Tuition refunds will not be made for tuition of $5.00 or less.

Refunds will not be made to students enrolled in short term, non-credit classes or for student accident insurance fees. Full refund will be made should the Institute cancel a class.

FINANCIAL AID

STUDENT LOAN FUND PROGRAM

Student loans are available for full-time students who need financial assistance to begin or to continue occupational education. The student must be a legal resident of North Carolina. Students who have been accepted for admission and wish to apply for a student loan should complete an application form at least six weeks prior to initial enrollment. Loan application forms and detailed information are available upon request from the Office of Student Personnel.

Three loan plans are available to students of Rowan Technical Institute. As a member of the College Foundation, Incorporated, Raleigh, N. C., the Institute participates in the North Carolina Banker's Insured Student Loan Plan, the Bryan Foundation Student Loan Plan, and the State Board of Education Student Loan for Vocational and Technical Education.

Under the North Carolina Banker's Insured Student Loan Plan, students who meet requirements may borrow up to $1,000 per academic year to be used for tuition fees, books, equipment, and living expenses. These loans are made under provisions of the Insured Loan Program of the Higher Education Act of 1965, interest at the rate of ½ of one percent per year while in school and 3½ percent per year during the repayment period is paid by the borrower. The remaining 3 percent is paid by the Federal Government.

The Bryan Foundation Student Loan Plan is also available for up to $1,000 per year at the same rate of interest: ½ of one percent while in school and 3½ percent during the repayment period.

The State Board of Education Student Loan Fund for Vocational and Technical Education also provides opportunities to borrow up to $300 per year. The rate of interest is 3½ percent per year beginning one year after the borrower ceases to be a full-time student. The loan must be repaid in five years.

WORK-STUDY PROGRAM

Work-study positions are available under provisions of the Vocational Education Act of 1963. To be eligible, the person must be enrolled or accepted for enrollment as a full-time student in occupational education. Applicants must be between 18 and 21 years of age and in need of the earnings to commence or to continue occupational education. Students approved for this program may be employed up to a maximum of 15 hours per week after regularly scheduled classes. Requests for information and application forms should be directed to the Office of Student Personnel.

PART-TIME EMPLOYMENT

Students in need of part-time employment to help meet educational and personal expenses will be assisted by the Office of Student Personnel in locating job opportunities in the local area.

HONORS AND AWARDS

GRADUATION WITH HONORS

A graduating student who has earned a quality point ratio of 3.0 during his work at the Institute will be graduated with honors.

OUTSTANDING STUDENT AWARDS

These awards are made to the students who have distinguished themselves by being most outstanding in terms of scholastic achievement, performance, and maturity of purpose during their program of instruction at Rowan Technical Institute. One student may be recognized for each one-year vocational program and each two-year technical program.

ACADEMIC REGULATIONS

GRADUATION REQUIREMENTS

Rowan Technical Institute confers the Associate in Applied Science degree upon students who satisfactorily complete a two-year technical education program. The Diploma is awarded to students who satisfactorily complete a one-year vocational education program.

The student's overall grade point average must be at least 2.0 ("C") on all courses attempted in order to satisfy requirements for graduation. The student also must be in good standing otherwise in order to be eligible for graduation.

SCHEDULE CHANGES

At the beginning of every quarter there is a period for students to change schedules and to drop and add courses. The time limit for such changes appears in the CALENDAR OF EVENTS.

GRADING SYSTEM

Each student will receive at mid-quarter an evaluation of his progress in each course. Mid-quarter grades are for student information only and are not placed on the permanent record.

At the end of the quarter the student will receive final grades based on the following system:

Letter Grade	Numerical Grade	Explanation	Quality Points for Credit
A	93-100	Excellent	4 quality points per qtr. hr.
B	85-92	Good	3 quality points per qtr. hr.
C	77-84	Average	2 quality points per qtr. hr.
D	70-76	Below Average	1 quality point per qtr. hr.
F	Below 70	Failed	0 quality point per qtr. hr.
WP		Withdrew Passing	Officially withdrew from class, passing
WF		Withdrew Failing	Officially withdrew from class, failing
I		Incomplete	Work must be made up within the first six weeks of the next quarter to obtain credit. If an "I" is not removed within this period, an "F" grade will be given.
AU		Audit	Enrollment as a non-credit student.
S		Satisfactory	Satisfactory completion of non-credit courses.
U		Unsatisfactory	Unsatisfactory completion of non-credit courses.

HONOR'S LIST

In order to honor outstanding students, the Honor's List will be published after each quarter. To qualify for the Honor's List, a student must take a minimum work load of 12 quarter hours and maintain at least a 3.0 ("B") average with no grade lower than "C".

TESTS AND FINAL EXAMINATIONS

The instructor may give tests and quizzes, oral and written, at his discretion. Regularly scheduled final examinations will be given at the end of each quarter.

SCHOLASTIC PROBATION

A full-time student failing to maintain a 2.0 ("C") scholastic average for any quarter will be placed on probation for the next quarter. Should the student fail to maintain a 2.0 grade-point average, he may be required to take a reduced course load. When a student is placed on probation he is so notified by letter of the terms of the probation and when he registers he automatically accepts the terms of probation.

SUSPENSION

Suspension is the action taken by the Institute to suspend or drop a student because of poor performance.

A probationary student failing to make satisfactory progress during the quarter in which he is on probation is subject to suspension.

The privilege of appeal is provided the suspended student. The student is required to write a letter to the Admissions Committee explaining his appeal and must appear before the Committee in person should the Committee so desire.

WITHDRAWAL

Students desiring to withdraw from the Institute should contact the Office of Student Personnel to obtain the necessary forms and procedures for official withdrawal. A student who fails to withdraw officially will receive a grade of "F" for each course in which he is enrolled.

TECHNICAL EDUCATION

TECHNICAL EDUCATION

Technical Education has recently assumed new importance in North Carolina and throughout the United States. Acute shortages of trained manpower have developed in many areas despite a surplus of persons who seemingly possess ability and interest in preparing themselves for technical occupations if appropriate opportunities were available.

Broadly defined, technical occupations are those which usually require a high degree of specialized knowledge, a broad understanding of operational procedures, and the ability to supervise the work of others. Rowan Technical Institute prepares students for a number of the basic positions in a particular field, and not for one specific job.

Technical programs of study are designed to prepare students to earn a living as technical personnel in business, industry, the health occupations or as owner-operators of their own establishments. This design recognizes that general education subjects take on occupational significance in community living, and that the technical subjects provide the freedom of action resulting from occupational competency.

Technical programs are not intended for transfer to a four year college or university. The ultimate objective is employment and further growth through occupational experience. The Associate in Applied Science degree is conferred to those students successfully completing a technical education program.

PROGRAMS OF STUDY

The Associate in Applied Science Degree is awarded upon completion of one of the following programs:

BUSINESS ADMINISTRATION

DRAFTING AND DESIGN TECHNOLOGY

ELECTRONICS TECHNOLOGY

EXECUTIVE SECRETARY

FIRE ADMINISTRATION TECHNOLOGY

FIRE AND SAFETY ENGINEERING TECHNOLOGY

MECHANICAL ENGINEERING TECHNOLOGY

MEDICAL SECRETARY

ADMISSION PROCEDURES

Applicants are encouraged to complete admission procedures as early as possible. Applications will be accepted from high school students during the senior year. Others may apply at any time during the year preceding enrollment. All data should be on file four weeks before initial enrollment.

High School graduation or the equivalent is required for admission to all two-year programs. For placement in engineering technology programs, two courses in mathematics are required, one of which must be algebra and the other either geometry or advanced algebra. Pre-curriculum courses are available to assist individuals who need to strengthen their general education background or remove deficiencies. For placement in business programs, no special high school courses are required, but the individual should have potentialities for a business career.

STEPS IN ADMISSION PROCEDURES

1. Complete the Application for Admission and return it with the application fee of $5.00. The application fee is not refundable but will be applied toward the tuition for the first quarter of attendance.
2. Have the high school principal forward a transcript of your high school record directly to Rowan Technical Institute. If you are in your final year of high school, a preliminary record should be sent in support of your application, with the understanding that it is to be supplemented after your graduation.
3. Have any college, university, or technical institute that you previously attended forward an official transcript of your record.
4. It is recommended that the applicant report to the nearest Employment Security Commission Office and ask to take the General Aptitude Test Battery (GATB). Request that results be sent directly to the Salisbury Office of the Employment Security Commission for forwarding to Rowan Technical Institute.
5. Report to the Institute for group and individual interviews when scheduled or notify the Institute to request another appointment.

BUSINESS ADMINISTRATION

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administration Curriculum are to develop: (1) Understanding of the principles of organization and management in business operations; (2) Understanding our economy through study and analysis of the role of production and marketing; (3) Knowledge in specific elements of accounting, finance, and business law; (4) Understanding and skill in effective communication for business; (5) Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

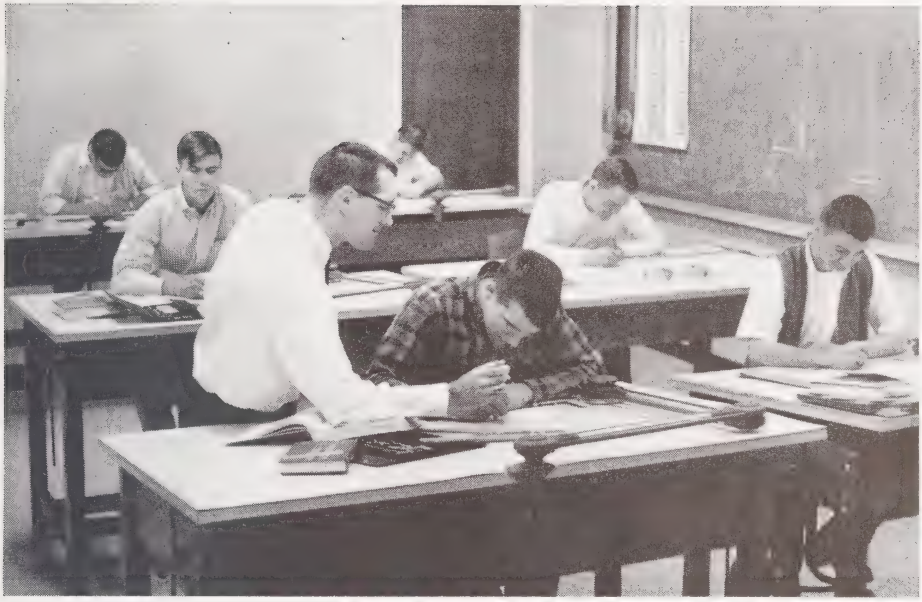
The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These duties might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit, finance, retailing; wholesaling; hotel, tourist, and travel industry, insurance, transportation, manufacturing, and communications.

BUSINESS ADMINISTRATION

Suggested Sequence of Required Courses

	Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 101	Grammar	3	0	3
T-BUS 102	Typewriting	2	3	3
T-MAT 110	Business Mathematics	5	0	5
T-BUS 101	Introduction to Business	5	0	5
T-ECO 102	Economics	3	0	3
		18	3	19
SECOND QUARTER				
T-ENG 102	Composition	3	0	3
T-BUS 120	Accounting	5	2	6
T-ECO 104	Economics	3	0	3
T-BUS 115	Business Law	3	0	3
T-BUS 123	Business Finance	3	0	3
		17	2	18
THIRD QUARTER				
T-ENG 103	Report Writing	3	0	3
T-BUS 124	Business Finance	3	0	3
T-BUS 110	Office Machines	2	2	3
T-BUS 121	Accounting	5	2	6
T-BUS 116	Business Law	3	0	3
		16	4	18
FOURTH QUARTER				
T-ENG 204	Oral Communication	3	0	3
T-BUS 232	Sales Development	3	0	3
T-EDP 104	Introduction to Data Processing Systems	3	2	4
T-BUS 239	Marketing	5	0	5
_____	Elective**	3	0	3
		17	2	18
FIFTH QUARTER				
T-ENG 206	Business Communication	3	0	3
T-PSY 206	Applied Psychology	3	0	3
T-BUS 243	Advertising	3	2	4
T-BUS 235	Business Management	3	0	3
_____	Elective**	3	0	3
		15	2	16
SIXTH QUARTER				
T-SSC 205	American Institution	3	0	3
T-BUS 229	Taxes	3	2	4
T-BUS 272	Principles of Supervision	3	0	3
T-BUS 271	Office Management	3	0	3
_____	Elective**	6	0	6
		18	2	19

***Elective courses must be selected with advisor's approval from the associate degree curriculum.*



DRAFTING AND DESIGN TECHNOLOGY

The Curriculum for Drafting and Design has been designed to provide optimum specialized technician instruction in a two year program.

The courses are arranged in a sequence that gives the student the required technological and specialized courses as they are needed to coordinate his laboratory experiences.

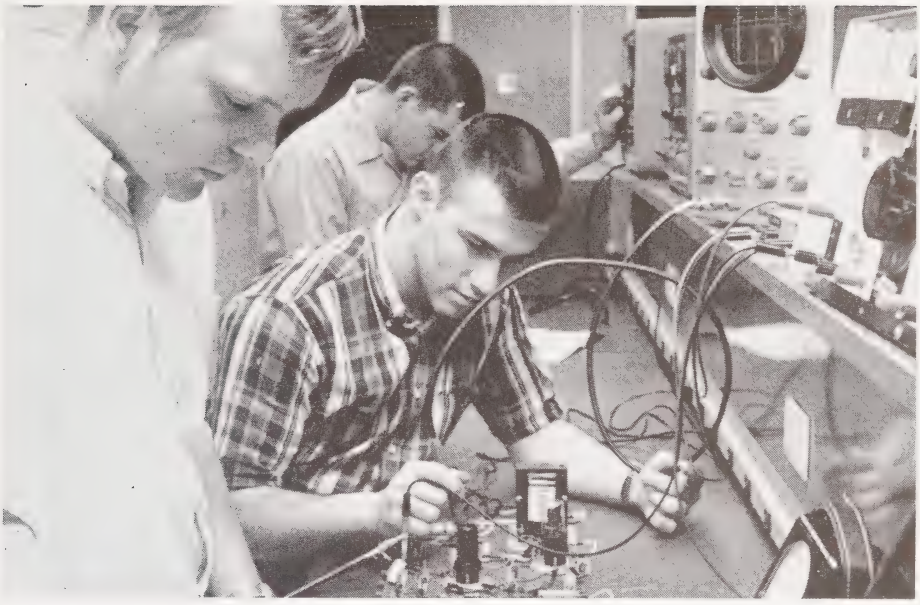
The curriculum is designed to qualify the graduate for performance of duties in the field of mechanical drafting and design requiring the application of engineering principles, but as applied to the technical aspects of the engineering field. As the student develops in drafting skills, mathematics, and related science, a gradual shift is made in the curriculum applying these skills to practical problems in design.

Typical job opportunities are found in the areas of state government, civil service, construction companies, industries, engineering consulting firms, and architectural firms.

DRAFTING AND DESIGN TECHNOLOGY

Suggested Sequence of Required Courses

Course Title			Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
T-ENG	101	Grammar	3	0	3
T-MAT	101	Technical Mathematics	5	0	5
T-PHY	101	Physics: Properties of Matter	3	2	4
T-DFT	101	Technical Drafting	0	6	2
T-MEC	101	Machine Processes	0	6	2
			11	14	16
SECOND QUARTER					
T-ENG	102	Composition	3	0	3
T-MAT	102	Technical Mathematics	5	0	5
T-PHY	102	Physics: Work, Energy, Power	3	2	4
T-DFT	102	Technical Drafting	0	6	2
T-MEC	102	Machine Processes	0	6	2
			11	14	16
THIRD QUARTER					
T-ENG	103	Report Writing	3	0	3
T-MAT	103	Technical Mathematics	5	0	5
T-PHY	103	Physics: Electricity	3	2	4
T-PHY	106	Applied Mechanics	5	0	5
T-DFT	103	Technical Drafting	0	9	3
			16	11	20
FOURTH QUARTER					
T-ENG	204	Oral Communication	3	0	3
T-DFT	201	Technical Drafting	2	6	4
T-DFT	204	Descriptive Geometry	2	4	4
T-MEC	205	Strength of Materials	3	2	4
T-MEC	210	Physical Metallurgy	3	3	4
			13	15	19
FIFTH QUARTER					
T-PSY	206	Applied Psychology	3	0	3
T-DFT	205	Design Drafting I	2	6	4
T-DFT	211	Mechanisms	3	2	4
T-MEC	211	Physical Metallurgy	3	3	4
T-DFT	212	Jig and Fixture Design	2	6	4
			13	17	19
SIXTH QUARTER					
T-POL	201	United States Government	3	0	3
T-DFT	206	Design Drafting II	4	6	6
T-MEC	235	Hydraulics & Pneumatics	3	3	4
T-ISC	201	Industrial Organization & Management	3	0	3
T-ELN	201	Industrial Controls	3	2	4
			16	11	20



ELECTRONICS TECHNOLOGY

The field of electronics has developed at a tremendously rapid pace, especially since 1940. For many years the major concern of electronics was in the area of communications. Developments during and following World War II have revolutionized production techniques. Completely new industries have been established to supplement the need and demand for electronics equipment. This rapid growth of the electronics industry has been accompanied by an equally phenomenal growth in the demand for qualified technicians—both men and women.

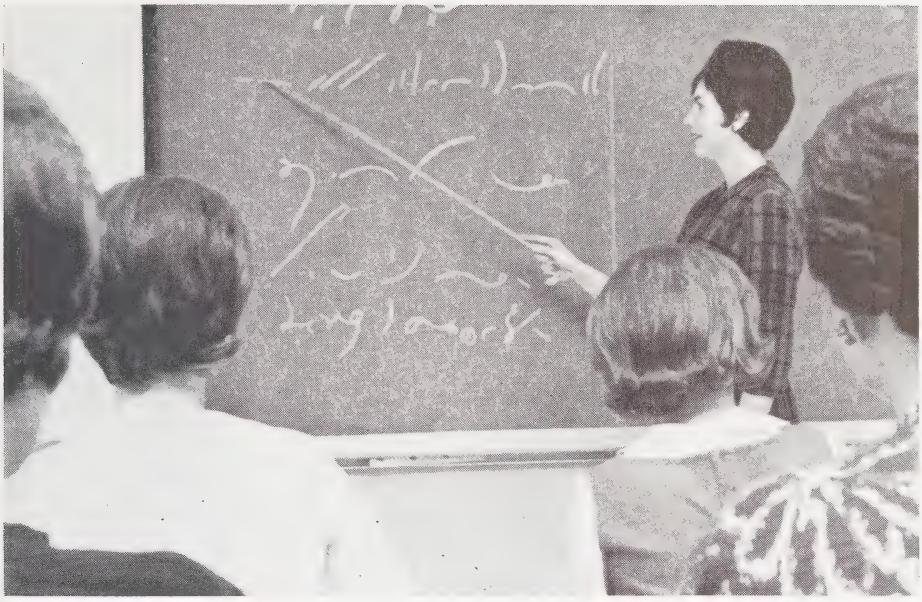
This program provides a basic background in electronics theory and practical applications for business and industry. The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance, or sales. He may be an engineering assistant, a laboratory technician, supervisor, or equipment specialist.

Upon completion of this program, students will find employment opportunities in such fields as radio and television production, radar, sonar, telemetering, and other forms of communication such as telephone; industrial and medical measuring, recording, indicating, and controlling devices; navigational equipment; missile and spacecraft guidance; electronic computers; and other types of equipment using vacuum tubes, transitors, and semiconductor circuits.

ELECTRONICS TECHNOLOGY

Suggested Sequence of Required Courses

	Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 101	Grammar	3	0	3
T-MAT 101	Technical Mathematics	5	0	5
T-PHY 101	Physics: Properties of Matter	3	2	4
T-DFT 101	Technical Drafting	0	6	2
T-ELC 101	Fundamentals of Electricity	4	4	6
		15	12	20
SECOND QUARTER				
T-ENG 102	Composition	3	0	3
T-MAT 102	Technical Mathematics	5	0	5
T-PHY 102	Physics: Work, Energy, Power	3	2	4
T-DFT 102	Technical Drafting	0	6	2
T-ELC 102	Fundamentals of Electricity	4	4	6
		15	12	20
THIRD QUARTER				
T-ENG 103	Report Writing	3	0	3
T-MAT 103	Technical Mathematics	5	0	5
T-PHY 104	Physics: Light & Sound	3	2	4
T-ELN 105	Control Devices	5	6	7
		16	8	19
FOURTH QUARTER				
T-ENG 204	Oral Communication	3	0	3
T-MAT 201	Technical Mathematics	5	0	5
T-ELN 101	Electronic Instruments & Measurements	1	6	3
T-ELN 205	Applications of Vacuum Tubes and Transistors	5	6	7
		14	12	18
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
T-ELN 210	Semiconductor Circuit Analysis	5	3	6
T-ELN 214	Wave Shaping and Pulse Circuits	2	2	3
T-ELN 230	Television Systems	4	6	7
		14	11	19
SIXTH QUARTER				
T-POL 201	United States Government	3	0	3
T-ELN 215	Wave Shaping and Pulse Circuits	2	2	3
T-ELN 220	Electronic Systems	5	6	7
T-ELN 235	Industrial Instrumentation	4	6	7
		14	14	20



EXECUTIVE SECRETARY

Almost 11 million people were employed in clerical or some closely related type of work in 1965. More than 2 million of these were employed in occupations requiring stenographic skills. In fact, more individuals are employed in the clerical fields than in any other category.

A very rapid increase in employment in the late 1960's and early 1970's is anticipated. Openings may total more than 200,000 annually. Local employment opportunities parallel national trends.

The Executive Secretary curriculum is designed to develop the necessary secretarial skills in typing, dictation, transcription, operation of office machines, and terminology for employment in the business world. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

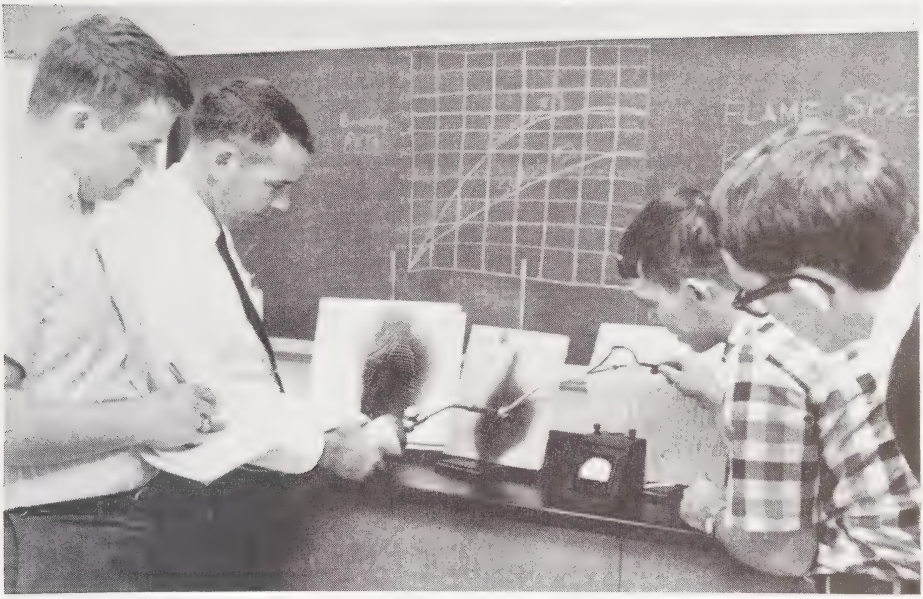
The graduate of the Executive Secretary curriculum may be employed as a stenographer or a secretary as well as in a variety of other clerical occupations. Stenographers are primarily responsible for taking dictation and transcribing letters, memoranda, or reports. The secretary, in addition to taking dictation and transcribing, is given more responsibility in connection with meeting office callers, screening telephone calls, handling numerous routine duties, private and confidential records, and a variety of business details on her own initiative. Positions are available in a variety of businesses such as insurance companies, banks, marketing institutions, financial firms, as well as all types of manufacturing firms.

EXECUTIVE SECRETARY

Suggested Sequence of Required Courses

Course Title			Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
T-ENG	101	Grammar	3	0	3
T-BUS	102	Typewriting	2	3	3
T-MAT	110	Business Mathematics	5	0	5
T-BUS	101	Introduction to Business	5	0	5
T-BUS	106	Shorthand	3	2	4
			18	5	20
SECOND QUARTER					
T-ENG	102	Composition	3	0	3
T-BUS	103	Typewriting	2	3	3
T-BUS	107	Shorthand	3	2	4
T-BUS	120	Accounting	5	2	6
T-BUS	115	Business Law	3	0	3
			16	7	19
THIRD QUARTER					
T-ENG	103	Report Writing	3	0	3
T-BUS	104	Typewriting	2	3	3
T-BUS	108	Shorthand	3	2	4
T-BUS	110	Office Machines	2	2	3
T-BUS	112	Filing	3	0	3
			13	7	16
FOURTH QUARTER					
T-ENG	204	Oral Communication	3	0	3
T-BUS	206E	Dictation and Transcription (Executive)	3	2	4
T-BUS	205	Advanced Typewriting	2	3	3
T-BUS	211	Office Machines	2	2	3
T-EDP	104	Introduction to Data Processing Systems	3	2	4
			13	9	17
FIFTH QUARTER					
T-ENG	206	Business Communication	3	0	3
T-BUS	207E	Dictation and Transcription (Executive)	3	2	4
T-BUS	214	Secretarial Procedures	3	2	4
T-PSY	206	Applied Psychology	3	0	3
———		Elective**	6	0	6
			18	4	20
SIXTH QUARTER					
T-SSC	205	American Institutions	3	0	3
T-BUS	208E	Dictation and Transcription (Executive)	3	2	4
T-BUS	271	Office Management	3	0	3
———		Electives**	6	0	6
			15	2	16

***Elective courses must be selected with advisor's approval from the associate degree curriculum.*



FIRE & SAFETY ENGINEERING TECHNOLOGY

Each year fire takes the lives of more than 11,500 people in the United States. Direct property loss is over one and one half billion dollars. Accidents and unsafe practices involving equipment result in more than 18,000 deaths and more than two million injuries annually.

The fire and safety engineering technician is responsible for trying to prevent these losses by eliminating the hazards. A reduction in losses can be accomplished only if the technician has complete knowledge of the problems and methods of accident prevention and fire safety.

This curriculum provides a basic background in fire protection, safety, and related subjects. Specific skills are developed in many phases of the occupation. Students are trained to determine fire and safety hazards and to analyze methods of eliminating hazards.

Opportunities in the field of fire engineering technology are broad in scope. Employment may be found with insurance companies, industrial firms, governmental agencies, educational organizations, fire equipment manufacturers, research foundations, and municipal and state departments. The Fire and Safety Engineering Technology curriculum is planned to fill the needs of the individual for employment with these types of organizations.

The fire and safety engineering technician inspects various types of occupancies for fire and safety hazards, checks existing fire and safety codes and resource materials for methods of eliminating fire and safety problems, and applies principles of protection in a logical sequence to arrive at solutions.

FIRE & SAFETY ENGINEERING TECHNOLOGY

Suggested Sequence of Required Courses

Course Title			Hours Per Class	Week Lab.	Quarter Hours Credit
FIRST QUARTER					
T-ENG	101	Grammar	3	0	3
T-MAT	101	Technical Mathematics	5	0	5
T-PHY	101	Physics: Properties of Matter	3	2	4
T-DFT	101	Technical Drafting	0	6	2
T-FIP	101	Introduction to Fire Protection Hazards	3	0	3
			14	8	17
SECOND QUARTER					
T-ENG	102	Composition	3	0	3
T-MAT	102	Technical Mathematics	5	0	5
T-PHY	102	Physics: Work, Energy, Power	3	2	4
T-DFT	102	Technical Drafting	0	6	2
T-FIP	102	Municipal Fire Protection	3	0	3
			14	8	17
THIRD QUARTER					
T-ENG	103	Report Writing	3	0	3
T-FIP	110	General Insurance	3	0	3
T-PHY	103	Physics: Electricity	3	2	4
T-CHM	101	Chemistry	4	2	5
T-FIP	103	Construction Codes & Material Rating	2	2	3
			15	6	18
Fire Service Internship*					
FOURTH QUARTER					
T-ENG	204	Oral Communications	3	0	3
T-FIP	220	Fire Fighting Strategy	3	0	3
T-FIP	215	Chemistry of Flammable Materials	3	4	5
T-FIP	211	Insurance Grading Schedules	3	0	3
T-FIP	205	Industrial Hazards & Fire Prevention	3	2	4
			15	6	18
FIFTH QUARTER					
T-SSC	201	Social Science I	3	0	3
T-FIP	240	Multiple Line Insurance & Rating Schedules	4	0	4
T-FIP	230	Hydraulics & Water Distribution	3	3	4
T-FIP	235	Inspection Principles & Practices	3	6	5
T-FIP	225	Fire Protection Law	3	0	3
			16	9	19
SIXTH QUARTER					
T-SSC	202	Social Science II	3	0	3
T-FIP	231	Sprinkler & Standpipe Systems	3	3	4
T-FIP	245	Automatic Alarm & Extinguishing System	2	4	4
T-FIP	216	Chemical & Radiation Hazards	3	2	4
T-FIP	226	Industrial Safety & Security	3	0	3
			14	9	18

**Each student is required to serve an internship in the fire service during the summer months between the third and fourth quarters of the program. The equivalent of the summer internship may be arranged on a different time basis. Individual arrangements for internships are made by the Institute in cooperation with municipal fire departments and other fire service agencies.*

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology student will learn the principles of machine design and their applications. He studies torsion, bending, and flexture of metals; industrial machinery, clutches, brakes, springs, and flywheels. He designs linkage, gear trains, and cams to give required motion to machines. The student will make accurate and complete engineering drawings of the parts that have been designed so that these parts can be produced in the shop. A complete study of materials and processes will be conducted by each student.

Some positions which graduates may fill are: Sales Engineers, Research Assistants, Layout and Detail Draftsmen, Foremen, Machine Designers, Assistant Plant Engineers, Field Service Engineers, Plant Safety Technician, and Mechanical Test Technician.

MECHANICAL ENGINEERING TECHNOLOGY

Suggested Sequence of Required Courses

	Course Title	Hours Per Class	Week Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 101	Grammar	3	0	3
T-MAT 101	Technical Mathematics	5	0	5
T-PHY 101	Physics: Properties of Matter	3	2	4
T-DFT 101	Technical Drafting	0	6	2
T-MEC 101	Machine Processes	0	6	2
		11	14	16
SECOND QUARTER				
T-ENG 102	Composition	3	0	3
T-MAT 102	Technical Mathematics	5	0	5
T-PHY 102	Physics: Work, Energy, Power	3	2	4
T-DFT 102	Technical Drafting	0	6	2
T-MEC 102	Machine Processes	0	6	2
		11	14	16
THIRD QUARTER				
T-ENG 103	Report Writing	3	0	3
T-MAT 103	Technical Mathematics	5	0	5
T-PHY 103	Physics: Electricity	3	2	4
T-PHY 106	Applied Mechanics	5	0	5
T-MEC 103	Machine Processes	1	6	3
		17	8	20
FOURTH QUARTER				
T-ENG 204	Oral Communication	3	0	3
T-MEC 205	Strength of Materials	3	2	4
T-MEC 210	Physical Metallurgy	3	3	4
T-MEC 213	Production Planning	3	3	4
T-MEC 201	Machine Processes	2	6	4
		14	14	19
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
T-MEC 211	Physical Metallurgy	3	3	4
T-DFT 211	Mechanisms	3	2	4
T-ISC 202	Quality Control	3	2	4
T-DFT 212	Jig & Fixture Design	2	6	4
		14	13	19
SIXTH QUARTER				
T-ECO 102	Economics	3	0	3
T-ISC 203	Motion Study	3	2	4
T-MEC 235	Hydraulics and Pneumatics	3	3	4
T-ISC 204	Value Analysis	3	0	3
T-ELN 201	Industrial Controls	3	2	4
		15	7	18

MEDICAL SECRETARY

The population explosion and the rapid advancements within the field of medical knowledge have created an acute need for medical personnel, including medical secretaries. The purpose of this program is to provide specialized training in the accepted procedures required by the medical and related health professions.

The Medical Secretary curriculum is designed to develop required skills such as typing, dictation, and transcriptions, as well as medical terminology and vocabulary. The special training in secretarial subjects is supplemented by needed related courses in mathematics, accounting, business law, personality development, and human relations.

The Medical Secretary may be employed in a variety of positions such as in physicians' offices, private and public hospitals, federal, state and local health programs, insurance offices, and pharmaceutical firms. The duties of the graduate may include taking dictation, transcribing, and typing letters, memoranda and medical reports; meeting office callers, screening telephone calls, scheduling appointments; maintaining medical records and insurance reports, as well as certain financial records.

MEDICAL SECRETARY

Suggested Sequence of Required Courses

		Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
T-ENG	101	Grammar	3	0	3
T-BUS	102	Typewriting	2	3	3
T-MAT	110	Business Mathematics	5	0	5
T-BUS	101	Introduction to Business	5	0	5
T-BUS	106	Shorthand	3	2	4
			18	5	20
SECOND QUARTER					
T-ENG	102	Composition	3	0	3
T-BUS	103	Typewriting	2	3	3
T-BUS	107	Shorthand	3	2	4
T-BUS	120	Accounting	5	2	6
T-BUS	115	Business Law	3	0	3
			16	7	19
THIRD QUARTER					
T-ENG	103	Report Writing	3	0	3
T-BUS	104	Typewriting	2	3	3
T-BUS	108	Shorthand	3	2	4
T-BUS	110	Office Machines	2	2	3
T-BUS	112	Filing	3	0	3
T-BUS	183M	Terminology and Vocabulary (Medical)	3	0	3
			16	7	19
FOURTH QUARTER					
T-ENG	204	Oral Communication	3	0	3
T-BUS	206M	Dictation and Transcription (Medical)	3	2	4
T-BUS	205	Advanced Typewriting	2	3	3
T-BUS	211	Office Machines	2	2	3
T-EDP	104	Introduction to Data Processing Systems	3	2	4
T-BUS	284M	Terminology and Vocabulary (Medical)	3	0	3
			16	9	20
FIFTH QUARTER					
T-ENG	206	Business Communication	3	0	3
T-BUS	207M	Dictation and Transcription (Medical)	3	2	4
T-BUS	214	Secretarial Procedures	3	2	4
T-PSY	206	Applied Psychology	3	0	3
_____		Elective**	3	0	3
			15	4	17
SIXTH QUARTER					
T-SSC	205	American Institutions	3	0	3
T-BUS	208M	Dictation and Transcription (Medical)	3	2	4
T-BUS	271	Office Management	3	0	3
_____		Elective**	3	0	3
			12	2	13

***Elective courses must be selected with advisor's approval from the associate degree curriculum.*

TECHNICAL COURSE DESCRIPTIONS

The contents of Technical courses are outlined in the following course descriptions. First year courses are numbered 100 through 199 and second year courses from 200 through 299. Courses should be pursued in normal sequence with prerequisite courses taken as indicated.

One quarter hour of credit is earned for a class meeting one hour each week for the duration of the quarter with the exception of regular laboratories and "manipulative laboratories." A "manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour is given for every three of these laboratory hours; one quarter hour is given for each two regular laboratory hours.

Provided for each course is the following information: subject number, title, number of hours of credit and in parentheses, the number of lecture hours and the number of laboratory hours each week.

Business

T-BUS 101 Introduction to Business **Credit 5 (5-0)**

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.

Prerequisite: None.

T-BUS 102 Typewriting **Credit 3 (2-3)**

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

Prerequisite: None.

T-BUS 103 Typewriting **Credit 3 (2-3)**

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence and business forms.

Prerequisite: T-BUS 102 or the equivalent. Speed requirement, 30 words per minute for five minutes.

T-BUS 104 Typewriting **Credit 3 (2-3)**

Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms.

Prerequisite: T-BUS 103 or the equivalent. Speed requirement, 40 words per minute for five minutes.

T-BUS 106 Shorthand **Credit 4 (3-2)**

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms and phrases.

Prerequisite: None.

T-BUS 107 Shorthand **Credit 4 (3-2)**

Continued study of theory with greater emphasis on dictation and elementary transcription.

Prerequisite: T-BUS 106 or the equivalent.

T-BUS 108 Shorthand **Credit 4 (3-2)**

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.

Prerequisite: T-BUS 107.

T-BUS 110 Office Machines **Credit 3 (2-2)**

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines and calculator.

Prerequisite: None.

T-BUS 112 Filing **Credit 3 (3-0)**

Fundamentals of indexing and filing, combining theory and practice by the use of miniature letters, filing boxes and guides. Alphabetic, Triple Check, Automation, Geographic, Subject, Soundex and Dewey Decimal filing.

Prerequisite: None.

T-BUS 115 Business Law **Credit 3 (3-0)**

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.

Prerequisite: None.

T-BUS 116 Business Law **Credit 3 (3-0)**

Includes the study of laws pertaining to bailments, sales, risk-bearing, partnership-corporation, mortgages, and property rights.

Prerequisite: T-BUS 115.

T-BUS 120 Accounting **Credit 6 (5-2)**

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.

Prerequisite: T-MAT 110.

T-BUS 121 Accounting **Credit 6 (5-2)**

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.

Prerequisite: T-BUS 120.

T-BUS 123 Business Finance **Credit 3 (3-0)**

Financing of business units, as individuals, partnerships, corporations and trusts. A detailed study is made of short-term, long-term and consumer financing.

Prerequisite: None.

T-BUS 124 Business Finance **Credit 3 (3-0)**

Financing, federal, state and local government and the ensuing effects upon the economy. Factors affecting supply of funds, monetary and credit policies.

Prerequisite: T-BUS 123.

T-BUS 183M Terminology and Vocabulary **Credit 3 (3-0)**

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in business, technical, and professional offices.

Prerequisite: T-BUS 107.

T-BUS 205 Advanced Typewriting **Credit 3 (2-3)**

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents.

Prerequisite: T-BUS 104. Speed requirement, 50 words per minute for five minutes.

T-BUS 206E Dictation and Transcription **Credit 4 (3-2)**

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed. Minimum dictation rate of 100 words per minute required for five minutes on new material.

Prerequisite: T-BUS 108.

T-BUS 206M Dictation and Transcription **Credit 4 (3-2)**

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed. Minimum dictation rate of 100 words per minute required for five minutes on new material.

Prerequisite: T-BUS 108.

T-BUS 207E Dictation and Transcription **Credit 4 (3-2)**

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices. Minimum dictation rate of 110 words per minute required for five minutes on new material.

Prerequisite: T-BUS 206.

T-BUS 207M Dictation and Transcription **Credit 4 (3-2)**

Covering materials appropriate to the course of study, the student develops the accuracy, speed and vocabulary that will enable her to meet the stenographic requirements of business and professional offices. Minimum dictation rate of 110 words per minute required for five minutes on new material.

Prerequisite: T-BUS 206M.

T-BUS 208E Dictation and Transcription **Credit 4 (3-2)**

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes on new material.

Prerequisite: T-BUS 207.

T-BUS 208M Dictation and Transcription **Credit 4 (3-2)**

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes on new material.

Prerequisite: T-BUS 207.

T-BUS 211 Office Machines **Credit 3 (2-2)**

Instructions in the operation of the bookkeeping-accounting machines, duplication equipment and the dictating and transcribing machines.

Prerequisite: T-BUS 110.

T-BUS 214 Secretarial Procedures **Credit 4 (3-2)**

Designed to acquaint the student with the responsibilities encountered by a secretary during work days. These include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

Prerequisite: None.

T-BUS 229 Taxes **Credit 4 (3-2)**

Application of federal and state taxes to various businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance.

Prerequisite: T-BUS 121.

T-BUS 232 Sales Development **Credit 3 (3-0)**

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.

Prerequisite: None.

T-BUS 235 Business Management **Credit 3 (3-0)**

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business–qualifications and requirements.

Prerequisite: None.

T-BUS 239 Marketing **Credit 5 (5-0)**

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process.

Prerequisite: None.

T-BUS 243 Advertising **Credit 4 (3-2)**

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.

Prerequisite: None.

T-BUS 271 Office Management **Credit 3 (3-0)**

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems.

Prerequisite: None.

T-BUS 272 Principles of Supervision **Credit 3 (3-0)**

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.

Prerequisite: None.

T-BUS 284M Terminology and Vocabulary **Credit 3 (3-0)**

Greater emphasis on an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in business, technical, and professional offices.

Prerequisite: T-BUS 183M.

Chemistry

T-CHM 101 Chemistry **Credit 5 (4-2)**

Study of the physical and chemical properties of substances, chemical changes; elements, compounds, gases, chemical combinations; weights and measurements; theory of metals; acids, bases, salts, solvents, solutions, and emulsions. In addition, study of carbohydrates; electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry.

Prerequisite: T-MAT 101.

Drafting and Design

T-DFT 101 Technical Drafting **Credit 2 (0-6)**

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.

Prerequisite: None.

T-DFT 102 Technical Drafting **Credit 2 (0-6)**

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.

Prerequisite: T-DFT 101.

T-DFT 103 Technical Drafting **Credit 3 (0-9)**

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included.

Prerequisite: T-DFT 102.

T-DFT 201 Technical Drafting **Credit 4 (2-6)**

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfer, gears and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating.

Prerequisite: T-DFT 103.

T-DFT 204 Descriptive Geometry **Credit 4 (2-4)**

Graphic analysis of space problems involving points, lines, planes, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.

Prerequisites: T-DFT 102, T-MAT 102.

T-DFT 205 Design Drafting I **Credit 4 (2-6)**

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of study. Types and methods of specifying materials and workmanship are an integral part of the course.

Prerequisites: T-DFT 204, T-MAT 102, T-PHY 102.

T-DFT 206 Design Drafting II **Credit 4 (2-6)**

Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.

Prerequisites: T-DFT 205, T-DFT 210.

T-DFT 211 Mechanisms **Credit 4 (3-2)**

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and accelerations of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.

Prerequisites: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

T-DFT 212 Jig and Fixture Design **Credit 4 (2-6)**

Commercial standards, principles, practices and tools of jig and fixture design, individual project and design work to acquaint students with the types of jigs and fixtures and their design.

Prerequisite: T-DFT 102.

Economics

T-ECO 102 Economics **Credit 3 (3-0)**

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.

Prerequisite: None.

T-ECO 104 Economics **Credit 3 (3-0)**

Greater depth in principles of economics, including a study of the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems.

Prerequisite: T-ECO 102.

Electrical

T-ELC 101 Fundamentals of Electricity **Credit 6 (4-4)**

Elementary principles of electricity including: basic electric units, Ohm's Law, Kirchhoff's Law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks.

Prerequisite: None.

T-ELC 102 Fundamentals of Electricity **Credit 6 (4-4)**

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to non-linear resistive control devices, and introduction to electro-mechanical devices.

Prerequisite: T-ELC 101.

Electronic Data Processing

T-EDP 104 Introduction to Data Processing Systems **Credit 4 (3-2)**

Fundamental concepts and operational principles of data processing systems, as an aid in developing a basic knowledge of computers. Prerequisite to the detail study of particular computer problems. This course is a prerequisite for all programming courses.

Prerequisite: None.

Electronics

T-ELN 101 Electronic Instruments and Measurements **Credit 3 (1-6)**

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.

Prerequisite: T-ELC 102.

T-ELN 105 Control Devices **Credit 7 (5-6)**

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two part system will be included.

Prerequisite: T-ELC 102.

T-ELN 201 Industrial Controls **Credit 4 (3-2)**

Industrial controls is the study of modern methods of controlling machinery by electronic circuitry. Machinery controls and electronic mechanisms that automatically operate machines will be studied. Types of motors, generators, control signals and devices, thyratrons, gates, switches, and servomechanism circuits are major areas of study.

Prerequisite: T-PHY 103.

T-ELN 205 Applications of Vacuum Tubes and Transistors **Credit 7 (5-6)**

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and oscillators.

Prerequisite: T-ELN 105.

T-ELN 210 Semiconductor Circuit Analysis **Credit 6 (5-3)**

A study in some depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations are considered. H. Y. Z. and T. parameters are employed as well as signal-flow graphs.

Prerequisite: T-ELN 105.

T-ELN 214 Wave Shaping and Pulse Circuits **Credit 3 (2-2)**

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits.

Prerequisites: T-ELN 105, T-MAT 103.

T-ELN 215 Wave Shaping and Pulse Circuits **Credit 3 (2-2)**

Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches.

Prerequisite: T-ELN 214.

T-ELN 220 Electronic Systems **Credit 7 (5-6)**

A block diagram course investigating numerous electronic systems. Modules or blocks of various circuits already studied are arranged in various manners to produce complex electronic systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered.

Corequisite: T-ELN 215.

T-ELN 230 Television Systems **Credit 7 (4-6)**

A study of the principles of television including the television system, camera tubes, scanning and synchronization, composite video signal, receiver circuits, transmitting equipment, color television, and closed-loop systems.

Corequisite: T-ELN 214

T-ELN 235 Industrial Instrumentation **Credit 7 (4-6)**

Broad introduction to use of industrial electro-mechanical and electronic circuits and equipment. Provides an understanding of the methods, techniques, and skills required for installation, service and operation of a variety of industrial control systems. Analysis of sensing devices for detecting changes in pressure, temperature, humidity, sound, light, electricity, the associated circuitry and indicating and recording devices.

Prerequisites: T-ELN 205, T-PHY 104.

English

T-ENG 101 Grammar **Credit 3 (3-0)**

Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.

Prerequisite: None.

T-ENG 102 Composition **Credit 3 (3-0)**

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition.

Prerequisite: T-Eng 101.

T-ENG 103 Report Writing **Credit 3 (3-0)**

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must have to do with something in his chosen curriculum.

Prerequisite: T-ENG 102.

T-ENG 204 Oral Communication **Credit 3 (3-0)**

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention given to conducting meetings, conferences, and interviews.

Prerequisite: T-ENG 101.

T-ENG 206 Business Communications **Credit 3 (3-0)**

Develops skills in techniques in writing business communications. Emphasis is placed on writing action—getting sales letters and prospectuses. Business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgments, remittances, and inquiry.

Prerequisite: T-ENG 102.

Fire Protection

T-FIP 101 Introduction to Fire Protection Hazards **Credit 3 (3-0)**

History and development of fire service, safety and security movements. The role of the fire service, protection and safety personnel. Ancillary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them.

Prerequisite: None.

T-FIP 102 Municipal Fire Protection **Credit 3 (3-0)**

Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, of apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection.

Prerequisite: T-FIP 101.

T-FIP 103 Construction Codes and Materials Rating **Credit 3 (2-2)**

A thorough study of building codes applicable to fire prevention, and principles and practices used in various types of building construction. Fire resistance tests and ratings of building materials.

Prerequisite: T-FIP 101.

T-FIP 110 General Insurance **Credit 3 (3-0)**

A fundamental course covering all fields of insurance. The philosophy and principles of insurance, contracts, endorsements, assignments, rate charging, reserves, and state supervision. Fire and casualty insurance is emphasized.

Prerequisite: None.

T-FIP 205 Industrial Hazards and Fire Prevention **Credit 4 (3-2)**

A study of hazardous processes in industries such as petroleum, furniture, chemical, tobacco, metal, and textile, and the protection and precautions needed for personnel and property safety. Hazards that are related to heating plants, electrical systems, and storage in all industries.

Prerequisites: T-FIP 102, T-FIP 215.

T-FIP 211 Insurance Grading Schedules **Credit 3 (3-0)**

Insurance grading schedules and their principles of application. Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. A study of the National Board Grading Schedule is made in detail with other schedules covered briefly.

Prerequisite: T-FIP 110.

T-FIP 215 Chemistry of Flammable Materials **Credit 5 (3-4)**

Theories of combustion and extinguishment, including the analysis of flammable materials and the nature of extinguishing agents. The properties of matter affecting fire behavior. The application of the laws and principles of chemistry and physics to the use, storage, and disposal of flammable solids, liquids, gases, and dusts.

Prerequisite: T-CHM 101.

T-FIP 216 Chemical & Radiation Hazards **Credit 4 (3-2)**

Intensive study and analysis of the special hazards encountered in the chemical and petroleum industries. Radiation hazards, effects of radiation on humans, exposure control, radiological instruments, operational and decontamination procedures, common uses of radioactive materials, transportation, storage. Application of special inspection procedures.

Prerequisite: T-FIP 215.

T-FIP 220 Firefighting Strategy **Credit 3 (3-0)**

The aspects of tactics and strategy in extinguishing fires. Pre-fire plans, mutual aid problems, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires by fuel analysis. Emphasis will be on developing thinking skills in relation to crises.

Prerequisite: T-FIP 102.

T-FIP 225 Fire Protection Law **Credit 3 (3-0)**

A study of law in relation to fire protection. Torts, terms and contracts studies by case method. Liability of fire protection personnel when making inspections, recommendations, fighting fires, and other tasks. Pertinent laws, ordinances, and codes and the responsibilities and powers of the individual or organization concerning enforcement.

Prerequisite: T-FIP 102.

T-FIP 226 Industrial Safety and Security **Credit 3 (3-0)**

A fundamental study of industrial safety records, development of safeguards, accident costs, and causes, job safety analysis, plants designed for safety, and safety maintenance. Methods of eliminating hazards including color coding, guards, and personal protective equipment. A study of the precautions and safeguards essential to protecting lives during fires in various types of occupancies. Exit code requirements, personnel protective devices, and practical safeguards will be studied. Review of case histories of fires and explosions which have resulted in loss of life to determine how these types of tragedies can be prevented.

Prerequisites: T-FIP 101, T-FIP 205.

T-FIP 230 Hydraulics and Water Distribution Systems **Credit 4 (3-3)**

Mechanics of the flow of fluids through fire hose, nozzles and appliances, pumps, standpipes, watermains, and other devices. Design, testing, and use of nozzles and appliances, pumps, and water distribution systems. Measurement of fluid flow and methods of determining quantities of water available from a distribution system. Practical application of principles.

Prerequisites: T-PHY 102, T-MAT 102.

T-FIP 231 Sprinkler and Standpipe Systems **Credit 4 (3-3)**

Types of sprinkler and standpipe systems, system devices and their operation, advantages of sprinkler systems, codes governing installation, water supply requirements, testing, inspection, and maintenance.

Prerequisite: T-FIP 230.

T-FIP 235 Inspection Principles and Practices **Credit 5 (3-6)**

A study of the fundamentals of fire inspections including standards, techniques of evaluation of hazards as to degree of the hazard, and practical recommendations. Reports including maps and sketches of each building inspected. On-the-site inspections of buildings to locate hazards and to recommend safe practices and improvements.

Prerequisites: T-DFT 102, T-FIP 103.

T-FIP 240 Multiple Line Insurance & Rating Schedules **Credit 4 (4-0)**

A study of multiple line insurance, types of policies, selection, rate making, settlement of claims, handling of risk, and self-insurance. Types of rating schedules including the analytic and merchantile schedule. Methods of determining fire rating classification.

Prerequisite: T-FIP 110.

T-FIP 245 Automatic Alarm & Extinguishing Systems **Credit 4 (2-4)**

A study of the types of fixed extinguishing systems, standard and special fire alarm and fire detection systems. Their operation, installation requirements, testing, inspection and maintenance.

Prerequisite: T-PHY 103.

Industrial Science

T-ISC 201 Industrial Organization and Management **Credit 3 (3-0)**

Organizational structure for industrial management, operational and financial activities, including accounting, budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities, selection, training and supervision of personnel as found in typical industrial organizations.

Prerequisite: None.

T-ISC 202 Quality Control **Credit 4 (3-2)**

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.

Prerequisite: None.

T-ISC 203 Motion Study **Credit 4 (3-2)**

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.

Prerequisite: None.

T-ISC 204 Value Analysis **Credit 3 (3-0)**

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in *identifying* and *removing* unnecessary cost by the use of sound decisions through a common sense approach.

Prerequisite: None.

Mathematics

T-MAT 101 Technical Mathematics **Credit 5 (5-0)**

The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed.

Prerequisite: Satisfactory evidence that admission requirements have been met.

T-MAT 102 Technical Mathematics **Credit 5 (5-0)**

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, determinants, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth.

Prerequisite: T-MAT 101.

T-MAT 103 Technical Mathematics **Credit 5 (5-0)**

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed.

Prerequisite: T-MAT 102.

T-MAT 110 Business Mathematics **Credit 5 (5-0)**

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes and pertinent uses of mathematics in the field of business.

Prerequisite: None.

T-MAT 201 Technical Mathematics **Credit 5 (5-0)**

A continuation of T-MAT 103. More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, parametric equations, and Fourier series.

Prerequisite: T-MAT 103.

Mechanical

T-MEC 101 Machine Processes **Credit 2 (0-6)**

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

Prerequisite: None.

T-MEC 102 Machine Processes **Credit 2 (0-6)**

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.

Prerequisite: T-MEC 101.

T-MEC 103 Machine Processes **Credit 3 (1-6)**

Modern machine tools of industry. Theory and practice with shaper, slotter, planer, turret lathe, screw machine, grinding and finishing machines. Gear design and the processes of gear manufacturing.

Prerequisite: T-MEC 102.

T-MEC 201 Machine Processes **Credit 4 (2-6)**

Newer concepts of work handling and automatic machining process. Chipless production and new techniques in metal forming. Analysis of high-energy forming, ultrasonic machining, electrolytic metal removal, chemical milling, numerical controls and simplified building block numerical control systems.

Prerequisite: T-MEC 103.

T-MEC 205 Strength of Materials **Credit 4 (3-2)**

Study of principles and analysis of stresses which occur within machine and structure Analyses of these stresses are made as applied to thin-walled cylinders and spheres, riveted elements subjected to various types of loads such as static, impact, varying and dynamic. and welded joints, beams, columns and machine components.

Prerequisites: T-PHY 106, T-MAT 103.

T-MEC 210 Physical Metallurgy **Credit 4 (3-3)**

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designating crystal planes, liquid and vapor phases, phase diagrams, and alloy systems.

Prerequisite: T-PHY 101.

T-MEC 211 Physical Metallurgy **Credit 4 (3-3)**

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations.

Prerequisite: T-MEC 210.

T-MEC 213 Production Planning **Credit 4 (3-3)**

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Drafting room layouts for planning and control.

Prerequisite: T-DFT 102.
Corequisite: T-MEC 201.

T-MEC 235 Hydraulics and Pneumatics **Credit 4 (3-3)**

The basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs.

Prerequisite: T-PHY 102.

Physics

T-PHY 101 Physics: Properties of Matter **Credit 4 (3-2)**

A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.

Prerequisite: None.

T-PHY 102 Physics: Work, Energy, Power **Credit 4 (3-2)**

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas.

Prerequisites: T-MAT 101, T-PHY 101.

T-PHY 103 Physics: Electricity **Credit 4 (3-2)**

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.

Prerequisites: T-PHY 101, T-MAT 101.

T-PHY 104 Physics: Light and Sound **Credit 4 (3-2)**

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serve as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout.

Prerequisites: T-MAT 101, T-PHY 101.

T-PHY 106 Applied Mechanics **Credit 5 (5-0)**

Concepts and principles of statics and dynamics. Parallel concurrent and noncurrent force systems in coplanar and noncoplanar situations. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion.

Prerequisites: T-MAT 103, T-PHY 102.

Political Science

T-POL 201 United States Government **Credit 3 (3-0)**

A study of government with emphasis on basic concepts, structure, powers, procedures and problems.

Prerequisite: None.

Psychology

T-PSY 206 Applied Psychology **Credit 3 (3-0)**

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings, and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

Prerequisite: None.

Social Science

T-SSC 201 Social Science I **Credit 3 (3-0)**

A combined course in the social sciences, drawing from the fields of anthropology, psychology, history, and sociology.

Prerequisite: None.

T-SSC 202 Social Science II **Credit 3 (3-0)**

A further study of social sciences with emphasis on economics, political science, and social problems as they relate to the individual.

Prerequisite: T-SSC 201.

T-SSC 205 American Institutions **Credit 3 (3-0)**

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.

Prerequisite: None.

VOCATIONAL EDUCATION

VOCATIONAL EDUCATION

The major aims of the Vocational Programs at Rowan Technical Institute are to prepare skilled craftsmen to successfully meet the manpower needs created by technological advancement and to provide related areas of study which equip the student with the ability to develop an understanding of the free enterprise system and an appreciation for a broader social implication of life in a democratic society.

The Vocational Programs are designed to prepare the student for initial employment, retraining for new skills, or for advancement within a given vocation.

A full-time student must present a transcript indicating high school graduation from a recognized high school or a High School Equivalency Certificate. However, the applicant with less than a high school education may be accepted provided he can demonstrate sufficient experience and ability.

Trade programs require one full year of participation for students on a full time basis. Applicants for the trade programs will, therefore, be urged to enroll for a full time program.

PROGRAMS OF STUDY

A diploma is awarded upon the completion of one of the following:

AIR CONDITIONING & REFRIGERATION MECHANICS

AUTOMOTIVE MECHANICS

ELECTRICAL INSTALLATION & MAINTENANCE

MACHINIST TRADE

PRACTICAL NURSE EDUCATION

WELDING TRADE

A certificate is awarded upon the completion of:

INDUSTRIAL SEWING MACHINE MECHANICS

ADMISSION PROCEDURES

Applicants are encouraged to complete admission procedures as early as possible. Applications will be accepted from high school students during the

senior year. Others may apply at any time prior to Fall Quarter enrollment, but preferably before July 15. At the latest, all data should be on file six weeks before initial enrollment.

STEPS IN ADMISSION PROCEDURES

1. Complete in detail the student Application For Admission and return it with the application fee of $5.00. The application fee is not refundable but will be applied toward your general fees at the time of your first enrollment.
2. Have your high school principal complete and mail a transcript of your school record directly to Rowan Technical Institute. If you are in your final year of high school, a preliminary record should be sent in support of your application, with the understanding that it is to be supplemented after your graduation.
3. High school graduation or the equivalent is recommended, but not required, for admission to a one-year trade program. The Institute follows an "open door" policy. If placement test results indicate that a student is inadequately prepared to make reasonable progress in a vocational education program, he may be asked to enroll in pre-curriculum non-credit courses or offered guidance in re-establishing a vocational objective.
4. Request that any previously attended college, university, or technical institute furnish this Institute with a complete transcript of your record.
5. It is recommended that the applicant report to the nearest Employment Security Commission Office and ask to take the General Aptitude Test Battery (GATB). Request that results be sent directly to the Salisbury Office of the Employment Security Commission for forwarding to Rowan Technical Institute.
6. Report to the Institute for group and individual interviews when scheduled or notify the Institute to request another appointment.

AIR CONDITIONING AND REFRIGERATION MECHANICS

The purpose of this curriculum is to provide a broad background of the technical information and skills necessary to the technician in designing, installing, and maintaining refrigeration and conditioning systems.

The curriculum is designed to provide the student with a good foundation in the theory and principles of refrigeration and comfort conditioning and at the same time, to give him a chance to experiment and receive practice in installing, maintaining, and repairing refrigeration and conditioning mechanisms and their controls. In the portion of the time devoted to the laboratory, theory and practice are correlated under the laboratory instructor. In addition, instruction is given in the technical subjects related to this field.

Occupational opportunities open to the graduate of this course of study are found often in the areas of installation, service, inspection, sales, and in the growing fields of truck and trailer refrigeration and automobile air conditioning.

AIR CONDITIONING AND REFRIGERATION MECHANICS

Suggested Sequence of Required Courses

	Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER				
AHR 1121	Principles of Refrigeration	3	12	7
MAT 1101	Fundamentals of Mathematics	5	0	5
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
DFT 1104	Blueprint Reading: Mechanical	0	3	1
		13	17	19
SECOND QUARTER				
AHR 1122	Domestic and Commercial Refrigeration	3	9	6
AHR 1113	Calculations & Estimating	5	0	5
ENG 1102	Communication Skills	3	0	3
ELC 1102	Applied Electricity	2	3	3
DFT 1116	Blueprint Reading: Air Conditioning	1	3	2
		14	15	19
THIRD QUARTER				
AHR 1123	Principles of Air Conditioning	3	12	7
AHR 1128	Automatic Controls	3	6	5
PSY 1101	Human Relations	3	0	3
WLD 1101	Basic Gas Welding	0	3	1
		9	21	16
FOURTH QUARTER				
AHR 1124	Air Conditioning and Refrigeration Servicing	3	6	5
AHR 1126	All Year Comfort Systems	3	6	5
MEC 1120	Duct Construction and Maintenance	3	6	5
BUS 1103	Small Business Operations	3	0	3
		12	18	18

AUTOMOTIVE MECHANICS

This is a one-year program providing a thorough training in the theoretical as well as manual skills in servicing, testing, and diagnosing. All phases of the electrical system, the power plant, the power train, and the hydraulic braking system will be studied.

The courses are arranged in a sequence that gives the student the required technological and special courses as they are needed to coordinate his laboratory experiences.

Emphasis is placed on the mechanical parts and operation of the various automobile units. Trouble shooting and servicing of the live project are also stressed.

Auto Mechanic, Truck and Bus Mechanic, Shop Foreman, Maintenance Supervisor, Dealer Service Manager, Sales Technician, Factory Representative, and Experimental Lab Work are among those occupational opportunities awaiting graduates of the Automotive Mechanics Curriculum.

AUTOMOTIVE MECHANICS

Suggested Sequence of Required Courses

		Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
PME	1101	Internal Combustion Engines	3	12	7
MAT	1101	Fundamentals of Mathematics	5	0	5
ENG	1101	Reading Improvement	2	0	2
PHY	1101	Applied Science	3	2	4
			13	14	18
SECOND QUARTER					
PME	1102	Engine Electrical and Fuel Systems	5	12	9
ENG	1102	Communication Skills	3	0	3
DFT	1101	Schematics and Diagrams: Power Mechanics	0	3	1
PHY	1102	Applied Science	3	2	4
			11	17	17
THIRD QUARTER					
AUT	1123	Automotive Chassis and Suspensions Systems	3	9	6
AUT	1121	Braking Systems	3	3	4
PSY	1101	Human Relations	3	0	3
AHR	1101	Automotive Air Conditioning	2	3	3
WLD	1101	Basic Gas Welding	0	3	1
			11	18	17
FOURTH QUARTER					
AUT	1124	Automotive Power Train Systems	3	9	6
AUT	1125	Automotive Servicing	3	9	6
BUS	1103	Small Business Operations	3	0	3
			9	18	15

ELECTRICAL INSTALLATION AND MAINTENANCE

The rapid expansion of the national economy and the increasing development of new electrical products is providing a growing need for qualified people to install and maintain electrical equipment. By mid-1960 more than 350,000 were employed as either construction electricians or maintenance electricians. Between 5,000 and 10,000 additional tradesmen are required each year just to replace those leaving the industry. It is expected that the total requirements for electrical tradesmen will reach 700,000 by 1970. The shortage of electricians is certainly noted in this local area also. Qualified licensed electricians are among the highest paid construction workers in the United States.

The graduate of the Electrical Installation and Maintenance Program will be qualified to enter the electrical trades where he will assist in the planning, lay-out, installation, check-out, and maintenance of systems in residential, commercial, or industrial plants. He will have an understanding of the fundamentals of the National Electrical Code regulations as related to wiring installations, electrical circuits, and the measurements of voltage, current, power, and power factor of single and polyphase alternating circuits. He will have a basic knowledge of motor and motor control systems; industrial electronic control systems; business procedures, organization, and practices; communicative skills; and the necessary background to be able to advance through experience and additional training. Following actual experience, the electrical installation and maintenance graduate will be eligible and should have the background to pass the North Carolina State Electrical License examination.

ELECTRICAL INSTALLATION AND MAINTENANCE

Suggested Sequence of Required Courses

		Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
ELC	1112	Direct and Alternating Current	5	12	9
ENG	1101	Reading Improvement	2	0	2
MAT	1115	Electrical Math	5	0	5
PHY	1101	Applied Science	3	2	4
			15	14	20
SECOND QUARTER					
ELC	1113	Alternating Current and Direct Current Machines and Controls	5	12	9
DFT	1110	Blueprint Reading: Building Trades	0	3	1
ENG	1102	Communication Skills	3	0	3
PHY	1102	Applied Science	3	2	4
			11	17	17
THIRD QUARTER					
ELC	1124	Residential Wiring	5	9	8
ELN	1118	Industrial Electronics	3	6	5
PSY	1101	Human Relations	3	0	3
DFT	1113	Blueprint Reading: Electrical	0	3	1
			11	18	17
FOURTH QUARTER					
ELC	1125	Commercial and Industrial Wiring	5	12	9
ELN	1119	Industrial Electronics	3	6	5
BUS	1103	Small Business Operations	3	0	3
			11	18	17

MACHINIST TRADE

Surveys recently completed in North Carolina and locally show that many of the existing industries lack the time and facilities for training enough machinists to meet present and planned needs. Expanding industries already located in our State and new industries under development invariably express the need for skilled machinists who have the background, knowledge, and potential to advance.

This curriculum is designed to give students the opportunity to acquire basic knowledge, skills, and related technical information necessary to gain employment in the machine shop industry. Students will develop skill in bench work, layout, drilling, lathe work, milling, shaping, planing, broaching, and grinding. Operating principles of machine tools, use of measuring and testing instruments, math and blueprint reading are also covered. Through actual shop experience, class assignments, discussions, demonstrations, and experiments, the students become industrially qualified.

The qualified graduate is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product and to switch readily from one kind of product to another.

MACHINIST TRADE

Suggested Sequence of Required Courses

	Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER				
MEC 1101	Machine Shop Theory and Practice	3	12	7
MAT 1101	Fundamentals of Mathematics	5	0	5
DFT 1104	Blueprint Reading: Mechanical	0	3	1
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
		13	17	19
SECOND QUARTER				
MEC 1102	Machine Shop Theory and Practice	3	12	7
MAT 1103	Geometry	3	0	3
DFT 1105	Blueprint Reading: Mechanical	0	3	1
PHY 1102	Applied Science	3	2	4
ENG 1102	Communication Skills	3	0	3
		12	17	18
THIRD QUARTER				
MEC 1103	Machine Shop Theory and Practice	3	12	7
MEC 1115	Treatment of Ferrous Metals	2	3	3
DFT 1106	Blueprint Reading: Mechanical	0	3	1
MAT 1104	Trigonometry	3	0	3
PSY 1101	Human Relations	3	0	3
		11	18	17
FOURTH QUARTER				
MEC 1104	Machine Shop Theory and Practice	3	12	7
MEC 1116	Treatment of Non-Ferrous Metals	2	3	3
WLD 1101	Basic Gas Welding	0	3	1
MAT 1123	Machinist Mathematics	3	0	3
BUS 1105	Industrial Organizations	3	0	3
		11	18	17

PRACTICAL NURSE EDUCATION

The accelerated growth of population in North Carolina and rapid advancement in medical technology demand a tremendously increased number of well-trained, capable personnel for health service positions. Rowan Technical Institute is affiliated with Cabarrus Memorial Hospital and Rowan Memorial Hospital to provide clinical resources for the practical nursing program.

Classes will be held at the Institute while actual experience will be obtained at the affiliated hospitals. The graduate is eligible to take and must pass the N. C. Board of Nursing LPN examination to obtain her license.

The LPN is qualified and prepared to function in a variety of situations: hospitals of all types, nursing homes, clinics, doctors' and dentists' offices and, in some localities, public health facilities. In all situations, the LPN functions under the supervision of a registered nurse and/or licensed physician.

Job requirements for the Licensed Practical Nurse include suitable personal characteristics, ability to adapt knowledge and understandings of nursing principles to a variety of situations, technical skills for performance of bedside nursing, appreciation for differences of people and for the worth of every individual, a desire to serve and help others, and readiness to conform to the requirements of nursing ethics and hospital policies.

PRACTICAL NURSE EDUCATION

Curriculum by Quarters

Course Title	Hours Per Week Class*	Lab*
FIRST QUARTER		
NUR 1001 Practical Nursing I	28	2
SECOND QUARTER		
NUR 1002 Practical Nursing II	12	24
THIRD QUARTER		
NUR 1003 Practical Nursing III	12	24
FOURTH QUARTER		
NUR 1004 Practical Nursing IV	12	24

**Figures given are averages, as there will be some variation from week to week.*

WELDING TRADE

The purpose of this curriculum is to provide a sound training program of the skills involved in welding along with a background of technical information needed by the modern welder.

The curriculum is designed to give the student a sound foundation in the principles, practices, and usages of both gas and electric welding in modern industry. At the same time he will be given ample practice in the welding skills. In the shop, theory and practice are combined under the guidance of an instructor thoroughly competent in the trade. In addition, instruction is given in technical subjects related to welding under the supervision of specialists in the technical fields.

Typical occupational opportunities are found in motor vehicle and equipment plants, air craft industry, construction companies, independent metal working repair shops, manufacturing firms, and self-employment.

WELDING TRADE

Suggested Sequence of Required Courses

		Course Title	Hours Per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
WLD	1120	Oxyacetylene Welding and Cutting	3	12	7
MAT	1101	Fundamentals of Mathematics	5	0	5
DFT	1104	Blueprint Reading: Mechanical	0	3	1
PHY	1101	Applied Science	3	2	4
ENG	1101	Reading Improvement	2	0	2
			13	17	19
SECOND QUARTER					
WLD	1121	Arc Welding	3	12	7
MAT	1103	Geometry	3	0	3
DFT	1117	Blueprint Reading: Welding	0	3	1
PHY	1102	Applied Science	3	2	4
ENG	1102	Communication Skills	3	0	3
			12	17	18
THIRD QUARTER					
WLD	1124	Pipe Welding	3	12	7
WLD	1123	Inert Gas Welding	1	3	2
WLD	1112	Mechanical Testing and Inspection	1	3	2
DFT	1118	Pattern Development and Sketching	0	3	1
PSY	1101	Human Relations	3	0	3
			8	21	15
FOURTH QUARTER					
WLD	1122	Commercial and Industrial Practices	3	9	6
WLD	1125	Certification Practices	3	6	5
MEC	1112	Machine Shop Processes	0	6	2
BUS	1105	Industrial Organizations	3	0	3
			9	21	16

INDUSTRIAL SEWING MACHINE MECHANICS

The Sewing Machine Mechanics program is provided to prepare persons for employment as Industrial Sewing Machine Mechanics in the needle trades and textile industry in North Carolina. The program is one year in length, providing 800 hours of supervised training. Students may be enrolled in either day or evening classes. A certificate is awarded upon satisfactory completion of this program. Details of this program may be obtained by writing to the Director of Student Personnel.

VOCATIONAL COURSE DESCRIPTIONS

The contents of Vocational courses are outlined in the following course descriptions. Courses are numbered 1000 through 2000. Courses should be pursued in normal sequence with prerequisite courses taken as outlined.

One quarter hour of credit is earned for a class meeting one hour each week for the duration of the quarter with the exception of regular laboratories and "manipulative laboratories." "Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour is given for each three of these laboratory hours; one quarter hour is given for each two regular laboratory hours.

Provided for each course is the following information: subject number, title, number of hours of credit and in parentheses, the number of lecture hours and the number of laboratory hours each week.

Air Conditioning

AHR 1101 Automotive Air Conditioning **Credit 3 (2-3)**
General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.
Prerequisite: PHY 1102.

AHR 1113 Calculations & Estimating **Credit 5 (5-0)**
Types of structures are studied in respect to heat loss and/or gain factors. Methods of calculating heat loads for various types of structures. Loads are calculated, systems are sized and estimates made for materials and installation.
Prerequisite: DFT 1104, MAT 1101.

AHR 1121 Principles of Refrigeration **Credit 7 (3-12)**
An introduction to the principles of refrigeration, terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Prerequisite: None.

AHR 1122 Domestic and Commercial Refrigeration **Credit 6 (3-9)**
Domestic refrigeration servicing of conventional, hermetic, and absorption systems. Cabinet care, controls, and system maintenance in domestic refrigerators, freezers, and window air conditioning units is stressed. Commercial refrigeration servicing of display cabinets, walk-in cooler and freezer units, and mobile refrigeration systems is studied. The use of manufacturers' catalogs in sizing and matching system components and a study of controls, refrigerants, servicing methods is made. The American Standard Safety Code for Refrigeration is studied and its principles practiced.
Prerequisite: AHR 1121.

AHR 1123 Principles of Air Conditioning **Credit 7 (3-12)**

Work includes the selection of various heating, cooling and ventilating systems, investigation and control of factors affecting air cleaning, movement, temperature, and humidity. Use is made of psychrometric charts in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Practical sizing and balancing of ductwork is performed as needed.

Prerequisite: AHR 1122.

AHR 1124 Air Conditioning and Refrigeration Servicing **Credit 5 (3-6)**

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air conditioned space. Installation of various ducts and lines needed to connect various components is made. Shop work involves burner operation, controls, testing and adjusting of air conditioning and refrigeration equipment, and location and correction of equipment failure.

Prerequisite: AHR 1123.

AHR 1126 All Year Comfort Systems **Credit 5 (3-6)**

Auxiliary equipment used in conjunction with refrigeration systems to provide both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil fired systems, gas fired systems, water circulating systems, and electric-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing valves, special types of thermostatic expansion valves, systems of deicing coils, and electric wiring and controls are included in the study.

Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls **Credit 5 (3-6)**

Types of automatic controls and their function in air conditioning systems. Included in the course will be electric and pneumatic controls for domestic and commercial cooling and heating; zone controls, unit heater and ventilator controls, commercial fan systems controls, commercial refrigeration controls, and radiant panel controls.

Prerequisites: ELC 1102, AHR 1122.

Automotive

AUT 1121 Braking Systems **Credit 4 (3-3)**

A complete study of various braking systems employed on automobiles and light weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair.

Prerequisite: PHY 1102.

AUT 1123 Automotive Chassis and Suspension Systems **Credit 6 (3-9)**

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, and front end and alignment.

Prerequisite: PME 1102.

AUT 1124 Automotive Power Train Systems **Credit 6 (3-9)**

Principles and functions of automotive power train systems: clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.

Prerequisites: PHY 1102, AUT 1123.

AUT 1125 Automotive Servicing **Credit 6 (3-9)**

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing, and replacing.

Prerequisites: AUT 1123, AUT 1121, AHR 1101.

Business

BUS 1103 Small Business Operations **Credit 3 (3-0)**

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.

Prerequisite: None.

BUS 1105 Industrial Organizations **Credit 3 (3-0)**

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction to the competitive system and the factors constituting product cost.

Prerequisite: None.

Drafting

DFT 1101 Schematics & Diagrams: Power Mechanics **Credit 1 (0-3)**

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes.

Prerequisite: None.

DFT 1104 Blueprint Reading: Mechanical **Credit 1 (0-3)**

Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes.

Prerequisite: None.

DFT 1105 Blueprint Reading: Mechanical **Credit 1 (0-3)**

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.

Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical **Credit 1 (0-3)**

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly.

Prerequisite: DFT 1105.

DFT 1110 Blueprint Reading: Building Trades **Credit 1 (0-3)**

Principles of interpreting blueprints and trade specifications common to the building trades. Development of proficiency in making three view and pictorial sketches.

Prerequisite: None.

DFT 1113 Blueprint Reading: Electrical **Credit 1 (0-3)**

Interpretation of schematics, diagrams and blueprints applicable to electrical installations with emphasis on electrical plans for domestic and commercial buildings. Sketching schematics, diagrams, and electrical plans for electrical installations using appropriate symbols and notes according to the applicable codes will be a part of this course.

Prerequisite: DFT 1110.

DFT 1116 Blueprint Reading: Air Conditioning **Credit 2 (1-3)**

A specialized course in drafting for the heating, air conditioning and refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans including duct and equipment layout plans, and shop sketches. The student will make tracings of floor plans and layout air conditioning systems.

Prerequisite: DFT 1122.

DFT 1117 Blueprint Reading: Welding **Credit 1 (0-3)**

A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications.

Prerequisite: DFT 1104.

DFT 1118 Pattern Development and Sketching **Credit 1 (0-3)**

Continued study of welding symbols; methods used in layout of sheet steel; sketching of projects, jigs and holding devices involved in welding. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates.

Prerequisite: None.

Electrical

ELC 1102 Applied Electricity **Credit 3 (2-3)**

The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be transformers, various types of motors and starting devices, switches, electrical heating devices and wiring.

Prerequisite: PHY 1101.

ELC 1112 Direct and Alternating Current **Credit 9 (5-12)**

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchhoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current, flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits.

Prerequisite: None.

ELC 1113 Alternating Current and Direct Current Machines and Controls **Credit 9 (5-12)**

Provides fundamental concepts in single and polyphase alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type control used in small appliances such as: thermostats, times, or sequencing switches.

Prerequisites: ELC 1112, MAT 1115.

ELC 1124 Residential Wiring **Credit 8 (5-9)**

Provides instruction and application in the fundamentals of blueprint reading, planning, layout, and installation of wiring in residential applications such as: services, switchboards, lighting, fusing wire sizes, branch circuits, conduits, National Electrical Code regulations in actual building mock-ups.

Prerequisites: ELC 1113, DFT 1110.

ELC 1125 Commercial and Industrial Wiring **Credit 9 (5-12)**

Layout, planning, and installation of wiring systems in commercial and industrial complexes, with emphasis upon blueprint reading and symbols, the related National Electrical Codes, and the application of the fundamentals to practical experience in wiring, conduit preparation, and installation of simple systems.

Prerequisites: ELN 1118, ELC 1124.

Electronics

ELN 1118 Industrial Electronics **Credit 5 (3-6)**

Basic theory, operating characteristics, and application of vacuum tubes such as: diodes, triodes, tetrodes, pentodes, and gaseous control tubes. An introduction to amplifiers using triodes, power supplies using diodes, and other basic applications.

Prerequisite: ELC 1113.

ELN 1119 Industrial Electronics **Credit 5 (3-6)**

Basic industrial electronic systems such as: motor controls, alarm systems, heating systems and controls, magnetic amplifier controls, welding control systems using thyratron tubes, and other basic types of systems commonly found in most industries.

Prerequisite: ELN 1118.

English

ENG 1101 Reading Improvement **Credit 2 (2-0)**

Designed to improve the student's ability to read rapidly and accurately. Special machines are used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition and to train for comprehension in larger units.

Prerequisite: None.

ENG 1102 Communication Skills **Credit 3 (3-0)**

Designed to promote effective communication through correct language usage in speaking and writing.

Prerequisite: ENG 1101.

Mathematics

MAT 1101 Fundamentals of Mathematics **Credit 5 (5-0)**

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.

Prerequisite: None.

MAT 1103 Geometry **Credit 3 (3-0)**

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations.

Prerequisite: None.

MAT 1104 Trigonometry **Credit 3 (3-0)**

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.

Prerequisite: MAT 1103.

MAT 1115 Electrical Math **Credit 5 (5-0)**

A study of fundamental concepts of algebra; basic operations of addition, subtraction, multiplication, and division; solution of first order equations, use of letters and signs, grouping, factoring, exponents, ratios, and proportions; solution of equations, algebraically and graphically; a study of logarithms and use of tables; an introduction to trigonometric functions and their application to right angles; and a study of vectors for use in alternating current.

Prerequisite: None.

MAT 1123 Machinist Mathematics **Credit 3 (3-0)**

Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems; concludes with an introduction to compound angle problems.

Prerequisite: MAT 1104.

Mechanical

MEC 1101 Machine Shop Theory and Practice **Credit 7 (3-12)**

An introduction to the machinist trade and the potential it holds for craftsmen. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.

Prerequisite: None.

MEC 1102 Machine Shop Theory and Practice **Credit 7 (3-12)**

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations on the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course.

Prerequisite: MEC 1101.

MEC 1103 Machine Shop Theory and Practice **Credit 7 (3-12)**

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.

Prerequisite: MEC 1102.

MEC 1104 Machine Shop Theory and Practice **Credit 7 (3-12)**

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.

Prerequisite: MEC 1103.

MEC 1112 Machine Shop Processes **Credit 2 (0-6)**

To acquaint the student with the procedures of layout work and the correct use of hand and machine tools. Experiences in the basic fundamentals of drill press and lathe operation; hand grinding of drill bits and lathe tools; set-up work applied to the trade.

Prerequisite: None.

MEC 1115 Treatment of Ferrous Metals **Credit 3 (2-3)**

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study.

Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals **Credit 3 (2-3)**

Continuation of the study of physical metallurgy. The non-ferrous metals: Bearing metals, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in this course.

Prerequisite: MEC 1115.

MEC 1120 Duct Construction and Maintenance **Credit 5 (3-6)**

Study of various duct materials including sheet steel, aluminum, and fiber glass. Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fabrication practices, layout methods, and development of duct systems. The student will service various duct systems and perform on the site repairs including ducts made of fiber glass. A study is made of duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation and ventilating hoods.

Prerequisites: DFT 1116, AHR 1123.
Corequisite: AHR 1126.

Nursing

NUR 1001 Practical Nursing I **(28-2)**

Designed to assist students in acquiring the knowledge, understandings, appreciations, and attitudes basic to effective nursing of patients of all ages and backgrounds. Emphasis is on nursing needs arising both from the individuality of the patient and from inability for self-care as a result of a health deviation. Patient-centered studies include analysis of patient needs, both through classroom study of hypothetical patient situations and through planned experiences in the clinical environment. Beginning skills in nursing methods are developed through planned laboratory practice and supervised patient care.

NUR 1002 Practical Nursing II **(12-24)**

Designed to introduce the student to deviation from normal, to nursing methods and therapeutic procedures, and to the clinical specialties. Continued patient-centered study, with introduction of the illness condition as an additional source of nursing needs. Increased emphasis on clinical activities and selected patient care.

NUR 1003 Practical Nursing III **(12-24)**

Designed to acquaint the student with common illness conditions, related nursing needs and therapeutic methods, and role of the practical nurse in care of patients with specific conditions. Learning situations are selected to illustrate commonalities with a wide variety of similar conditions and to promote student awareness of similarities and differences. Clinical practice emphasizes student experience in care of subacutely ill patients with a wide variety of illnesses, correlated with classroom studies insofar as possible.

NUR 1004 Practical Nursing IV **(12-24)**

Designed to introduce the student to care of patients with complex nursing needs and to the assisting role of the practical nurse in situations requiring judgments based on depth of knowledge. Clinical practice includes supervised care of labor patients and seriously ill adults and children.

Physics

PHY 1101 Applied Science **Credit 4 (3-2)**

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles.

Prerequisite: None.

PHY 1102 Applied Science **Credit 4 (3-2)**

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power.

Prerequisite: PHY 1101.

Power Mechanics

PME 1101 Internal Combustion Engine **Credit 7 (3-12)**

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing.

Prerequisite: None.

PME 1102 Engine Electrical and Fuel Systems **Credit 9 (5-12)**

A thorough study of the electrical and fuel systems of the automobile. Battery cranking mechanism, generator, ignition, accessories and wiring; fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system.

Prerequisite: PME 1101.

Psychology

PSY 1101 Human Relations **Credit 3 (3-0)**

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation.

Prerequisite: None.

Welding

WLD 1101 Basic Gas Welding **Credit 1 (0-3)**

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; bronze welding, silver-soldering, and flame-cutting methods applicable to mechanical repair work.

Prerequisite: None.

WLD 1112 Mechanical Testing and Inspection **Credit 2 (1-3)**

The standard methods for mechanical testing of welds. The student is introduced to the various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are: bend, destructive, free-bend, guided-bend, nick-tear, notched-bend, tee-bend, non-destructive, V-notch, Charpy impact, etc.

Prerequisites: WLD 1120, WLD 1121.

WLD 1120 Oxacetylene Welding and Cutting **Credit 7 (3-12)**

Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, brazing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds.

Prerequisite: None.

Corequisites: MAT 1101, DFT 1104.

WLD 1121 Arc Welding **Credit 7 (3-12)**

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment.

Prerequisite: None.

Corequisite: MAT 1101.

WLD 1122 Commercial and Industrial Practices **Credit 6 (3-9)**

Designed to build skills through practices in simulated industrial processes and techniques: sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection.

Prerequisites: WLD 1120, WLD 1121.

WLD 1123 Inert Gas Welding **Credit 2 (1-3)**

Introduction and practical operation in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operation, shielding gases, filler rods, process variations and applications, manual and automatic welding.

Prerequisites: WLD 1120, WLD 1121.

WLD 1124 Pipe Welding **Credit 7 (3-12)**

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME code.

Prerequisite: WLD 1121.

WLD 1125 Certification Practices **Credit 5 (3-6)**

This course involves practice in welding the various materials to meet certification standards. The student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds.

Prerequisites: WLD 1120, WLD 1121, WLD 1123, WLD 1124.

ADULT EDUCATION AND EXTENSION PROGRAMS

GENERAL INFORMATION

An important function of Rowan Technical Institute is to provide general educational opportunities for the adults of Rowan and surrounding counties. Those adults interested in preparing for a skilled occupation are referred to the vocational and technical sections of the catalog. Other adults interested in upgrading courses, skill improvement, high school completion, or personal interest classes will find such programs explained on the following pages. Additional information concerning any program in this section may be obtained by contacting the Director of Adult Education and Extension Programs, Rowan Technical Institute.

ADMISSION

Any adult living within commuting distance of the Institute is eligible to attend adult education classes offered by the Institute on campus, or at any of the several adult education centers in surrounding areas. Any student admitted to class must have reached his 18th birthday, or his regular public school class must have graduated.

CLASS LOCATIONS

A number of adult classes are held on the Institute campus. Classes are also conducted in the following communities:

Concord	Spencer
Kannapolis	Mooresville
Salisbury	Albemarle

New classes may be established whenever a sufficient number of students in a given community show interest in having classes taught in their community.

FEES

A small fee is charged for certain adult education classes. Such fees, when charged, are due and payable before the first class session. Books and supplies are available through the Institute bookstore. When classes meet at community centers, the Institute bookstore makes it possible for books to be purchased at the community center.

ATTENDANCE

Adults are expected to attend class regularly. Attendance records are maintained by class teachers.

CERTIFICATES AND DIPLOMAS

Certificates are awarded students meeting requirements for many of the classes and programs for adults. Adult Education High School Diplomas are awarded to adults satisfactorily completing requirements in the High School program by the State Board of Education through a local superintendent of schools.

PROGRAM DESCRIPTIONS

The Adult Education and Extension Division of the Institute offers an increasing variety of courses and programs.

The continuing development of adult programs is based upon the community's particular and varied needs in areas of formal academic learning, cultural advancement, vocational improvement, and creative personal interests.

Accordingly, academic courses range from adult literacy training through high school certificate preparation and other preparatory classes.

Non-credit courses, workshops and study groups in human relations, life problems and social action are available according to interest and demand, as are programs in art and music.

ADULT BASIC EDUCATION

Adult Basic Education is a program designed with one major purpose—to assist adults who wish to improve their skills in oral and written communication, arithmetic, basic science, and social studies. Classes meet two nights weekly in the local communities where there is a sufficient number of interested adults.

No registration fee is required and materials are provided by the Institute. All materials used have been especially prepared with emphasis on individual needs and interests.

Classes are organized in the following groups:

Group I

The basic fundamentals of reading, writing, and arithmetic are stressed in Group I. The course is designed to bring adults to a functional level whereby individual study is possible. Some basic science and social studies are introduced at this level.

Group II

Group II is a continuation of the first level with more individual study and a greater scope of subject matter including science and social studies. With the completion of Group II, the adult should be equipped to go into the Adult High School program.

Organized adult basic education classes meet at the following locations:

Rowan Technical Institute
R. A. Clement School, Cleveland
Dunbar High School, East Spencer
Aggrey Memorial School, Landis
Spencer School, Spencer
Shankletown School, Concord
Mocksville Elementary School, Mocksville
Central Davie School, Mocksville

ADULT EDUCATION HIGH SCHOOL COURSES

The Adult Education High School courses are designed for adults. Each student works separately and progresses according to his abilities.

Transcripts of high school records are required of those students enrolled in the Adult Education High School courses who have previously attended high school. The student should contact the last school attended requesting the transcript to be forwarded to the Director of Adult Education at the Institute.

Standardized tests are used to determine achievement. Adult students are placed in the learning environment according to the results of preliminary testing. When scores indicate that the required achievement level has been attained, students who are 21 years of age or older are then eligible to receive the Adult Education High School Diploma awarded by the student's local Board of Education.

LEARNING LABORATORY

The Learning Laboratory enables a person, at any educational level, to further his knowledge in many subject areas. This is a new approach to education with the use of programmed instructional materials and teaching machines.

Two Learning Laboratories are maintained for the convenience of adults in the area. One is located on the Salisbury campus and the second is located in the Cabarrus County Adult Education Center of Rowan Technical Institute, Highway 29 South, Concord.

The prospective student may come into the laboratory at any time his personal schedule will permit. The laboratories are open from 8:30 a.m. until 10:00 p.m., Monday through Friday. This approach to learning may be pursued by any adult who desires self improvement, regardless of educational background.

Subjects available in programmed instruction include: English, social studies, mathematics, foreign languages, reading skills, and science.

There are no fees required of persons enrolling in the Learning Laboratory.

CULTURAL DEVELOPMENT ACTIVITIES

The cultural development activities provided by the Institute enables the adult to further develop an area of his interests. In addition to the areas of study suggested below, the adult may enroll in any of the Institute's courses on a non-credit basis providing he meets prerequisite requirements.

Some of the study areas especially designed for the adult are:

Creative Arts
Home Decoration
Health Education
Family Life
Parent Education
Consumer Education
Investments
Family Finance

TRAINING SERVICES TO BUSINESS AND INDUSTRY

The Vocational Extension classes conducted by Rowan Technical Institute are developed to fit the needs of industry and business and to provide training desired by employed individuals of the area. Because of the flexibility of these programs, courses are tailored to specific group needs. New programs are initiated as the need is indicated by surveys, interviews and sufficient enrollment in individual classes. Some examples of courses offered are:

Blueprint Reading for all trades
Mathematics for Machinists
Basic Chemistry for Textile Dyeing
Sliderule
Automotive Electrical Systems
Industrial Air Conditioning Systems
Basic Electricity
Electronics
Pipe Welding

In-plant programs are designed to improve and enhance employee skills. Industry is invited to make their needs known to the Director of the Extension Division.

SUPERVISORY DEVELOPMENT TRAINING

The Supervisory Development program has been designed to provide instruction for supervisors at various levels of management to prepare them for advancement.

Classes available to supervisory personnel are:

Human Relations
Economics in Business and Industry
Art of Motivating People
Effective Communications
Effective Writing
Effective Speaking
Reading Improvement
Work Measurement
Job Methods
Conference Leadership
Creative Thinking
Industrial Safety and Accident Prevention
Industrial First-Aid
The Supervisor in North Carolina
The Supervisor and Employee Benefits
Job Analysis Training
Cost Accounting for Supervisors

FIRE SERVICE TRAINING

The growing Piedmont area of North Carolina requires expansion of fire fighting units and continuous up-grading of fire fighting personnel. Courses to train fire service personnel in the latest techniques and methods of fire fighting are provided through the Extension Division of the Institute. The Fire Service Training program provides training sessions in local fire departments. This allows the men to be trained as an organized group utilizing equipment that would ordinarily be used in controlling fires.

Fire Service classes include the following areas of study:

Forcible Entry
Rope Practices
Portable Fire Extinguishers
Ladder Practices
Salvage and Overhaul Practices
Fire Stream Practices
Fire Apparatus Practices
Ventilation

Rescue Practices
Protective Breathing Equipment
Firefighting Procedures

HOSPITALITY AND TOURISM EDUCATION

The Hospitality industry is the third largest industry in North Carolina and affords many employment opportunities to the people of this state. Hospitality training programs are available through the Institute. Training is provided for personnel in the motel, restaurant, service station, hospital, and retail businesses. Some of the subject areas covered are:

Human Relations
Communication
Sales Promotion
Hotel-Motel Law
Economics
Food and Beverage Management and Service
Food and Beverage Purchasing
Food and Beverage Controls
Supervisory Housekeeping
Maintenance and Engineering
Accounting
Front Office Procedure
Housekeeping Training
Waiter-Waitress Training
Service Station Attendant Training

DISTRIBUTIVE OCCUPATIONAL TRAINING

A continuing need for better trained retail personnel is another area in which the Institute offers opportunity for training. Classes are available in the following subject areas:

Business Management
Marketing Research
Business Insurance
Personnel Management
Shop-lifting Prevention
Personality Development
Job Relations in Business
Credit and Collections
How Our Business System Works
Advertising
Customer Relations
Interior Display

SEMINARS AND CONFERENCES

The Institute is host to a number of local and state groups that conduct seminars and conferences. The centrally located campus is ideal for one-day or week-long conferences. Lodging facilities and restaurants are located nearby for out-of-town participants. Special rates are available and arrangements can be made by contacting the Director of Adult Education and Extension Programs.

CALENDAR OF EVENTS
1966-67

FALL QUARTER

September	6	Tuesday	Registration
	7	Wednesday	Student Orientation
	8	Thursday	First day of classes
	13	Tuesday	Last day for late registration
	21	Wednesday	Last day for withdrawal from courses without failure
October	14	Friday	Mid-Quarter progress reports
November	23	Wednesday	Last day of classes

WINTER QUARTER

November	28	Monday	Registration
	30	Wednesday	First day of classes
December	5	Monday	Last day for late registration
	13	Tuesday	Last day for withdrawal from courses without failure
	20	Tuesday	Christmas Holidays begin—10:00 p.m.
January	2	Monday	Classes resume
	17	Tuesday	Mid-Quarter progress reports
February	24	Friday	Last day of classes

SPRING QUARTER

February	28	Tuesday	Registration
March	2	Thursday	First day of classes
	7	Tuesday	Last day for late registration
	15	Wednesday	Last day for withdrawal from courses without failure
	23	Thursday	Easter Holidays begin—10:00 p.m.
	28	Tuesday	Classes resume
April	11	Tuesday	Mid-Quarter progress reports
May	19	Friday	Last day of classes

SUMMER QUARTER

June	12	Monday	Registration
	13	Tuesday	First day of classes
	16	Friday	Last day for late registration
	26	Monday	Last day for withdrawal from courses without failure
July	4	Tuesday	Holiday—Independence Day
	20	Thursday	Mid-Quarter progress reports
August	29	Tuesday	Last day of classes
			Evening Graduation Exercises

CALENDAR OF EVENTS
1967-68

FALL QUARTER

September	11	Monday	Registration
	12	Tuesday	Student Orientation
	14	Thursday	First day of classes
	19	Tuesday	Last day for late registration
	27	Wednesday	Last day for withdrawal from courses without failure
October	20	Friday	Mid-Quarter progress reports
November	23-24	Thurs.-Fri.	Thanksgiving Holidays
December	1	Friday	Last day of classes

WINTER QUARTER

December	5	Tuesday	Registration
	7	Thursday	First day of classes
	12	Tuesday	Last day for late registration
	20	Wednesday	Last day for withdrawal from courses without failure
	21	Thursday	Christmas Holidays begin—10:00 p.m.
January	2	Tuesday	Classes resume
	23	Tuesday	Mid-Quarter progress reports
March	1	Friday	Last day of classes

SPRING QUARTER

March	5	Tuesday	Registration
	7	Thursday	First day of classes
	12	Tuesday	Last day for late registration
	20	Wednesday	Last day for withdrawal from courses without failure
April	11	Thursday	Mid-Quarter progress reports Easter Holidays begin—10:00 p.m.
	16	Tuesday	Classes resume
May	24	Friday	Last day of classes

SUMMER QUARTER

June	10	Monday	Registration
	12	Wednesday	First day of classes
	17	Monday	Last day for late registration
	25	Tuesday	Last day for withdrawal from courses without failure
July	4-5	Thurs.-Fri.	Holidays—Independence Day
	22	Monday	Mid-Quarter progress reports
August	29	Thursday	Last day of classes Evening Graduation Exercises